MX Component Version 3

Operating Manual

MITSUBISHI

MELSOFT

*O*peration

*M*aintenance

*P*rogramming
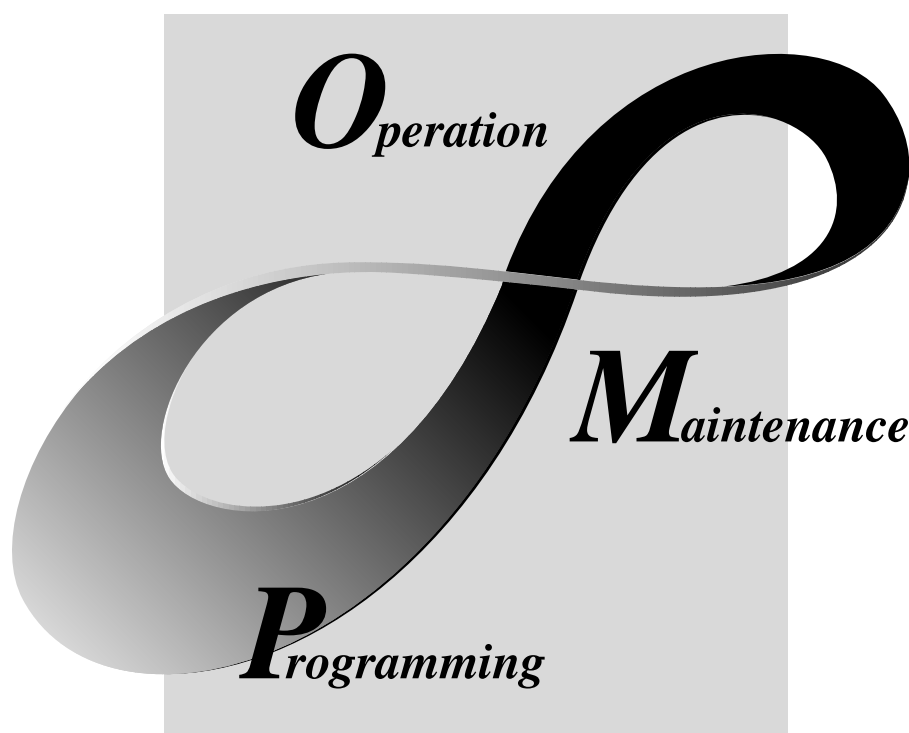
MELSOFT
Integrated FA Software

SW3D5C-ACT-E

• SAFETY PRECAUTIONS •

(Always read these instructions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.

The instructions given in this manual are concerned with this product. For the safety instructions of the programmable controller system, please read the CPU module user's manual.

In this manual, the safety instructions are ranked as "DANGER" and "CAUTION".

| ◇ DANGER | Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury. |
| △ CAUTION | Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage. |

Note that the △CAUTION level may lead to a serious consequence according to the circumstances. Always follow the instructions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

[Design Instructions]

◇ DANGER

- When performing data changes or status control from the personal computer to the running PLC, configure up an interlock circuit outside the PLC system to ensure that the whole system will operate safely.
  In addition, predetermine corrective actions for the system so that you can take measures against any communication error caused by a cable connection fault or the like in online operations performed from the peripheral device to the PLC.

△ CAUTION

- Read the manual carefully before performing the online operations (especially forced output and operating status change) which will be executed with the personal computer connected to the running CPU module.
  Not doing so can damage the machine or cause an accident due to misoperation.

REVISIONS

This section gives explanation of instructions in the following order.
1) Instructions for used OS and personal computer
2) Instructions for installation and uninstallation
3) PLC CPU-related instructions
4) Instructions for use of other MELSOFT products
5) Instructions for use of Ethernet modules
6) Instructions for use of CC-Link modules
7) Instructions for use of MELSECNET(II), MELSECNET/10 and MELSECNET/H
8) Instructions for use of computer link and serial communication modules
9) Instructions for modem communication
10) Instructions for programming
11) Instructions for use of Microsoft® Excel
12) Instructions for use of Microsoft® Access
13) Instructions for use of VBScript and ASP function

| Instructions for used OS and personal computer |

(1) When using Microsoft® Windows NT® Workstation Operating System Version 4.0, Microsoft® Windows® 2000 Professional Operating System, Microsoft® Windows® XP Professional and Microsoft® Windows® XP Home Edition
When using Windows NT® Workstation 4.0, Microsoft® Windows® 2000 Professional, Microsoft® Windows® XP Professional and Microsoft® Windows® XP Home Edition, MX Component may be installed and used only on the administrator's authority.

(2) About Ethernet communication, computer link communication and CPU COM communication on Microsoft® Windows® 95 Operating System
(a) Making Ethernet communication using TCP/IP and UDP/IP on Windows® 95 of the version older than OSR2 will cause a memory leak. When performing continuous operation on Windows® 95, use Window® 95 OSR2 or later.
(b) On Windows® 95, communication using the COM port, e.g. computer link communication or CPU COM communication, will cause a memory leak. Therefore, do not perform continuous operation.

(3) Precautions for use of Microsoft® Windows® Millennium Edition Operating System
It is not recommended to use MX Component with the "system restoring function" made invalid by the operating system.
If the free space of the system drive becomes less than 200MB, the "system restoring function" is made invalid by the operating system. When using Windows® Me, reserve a 200MB or more free space for the system drive.

(4) About the resume and other functions of personal computer
A communications error may occur if communications are made with the PLC CPU after setting the resume function, suspend setting, power-saving function and/or standby mode of the personal computer.
Therefore, do not set the above functions when making communications with the PLC CPU.

(1) About installation
(a) When performing overwrite installation, install the software in the folder where it had already been installed.
(b) If you install the MELSEC board driver or GX Developer into the personal computer where MX Component has already been installed, communication using a specific path (e.g. ASCII packet of the AJ71E71) may result in a receive, device number or other error.
If any of these phenomena has occurred, perform overwrite installation of MX Component again.

(2) Precautions for performing installation and uninstallation on a dual boot machine where two different operating systems are installed in a single IBM-PC/AT compatible personal computer

On a dual boot machine having Windows NT® Workstation 4.0 (hereafter referred to as OS1) and Windows® 95 or Windows® 98 (hereafter referred to as OS2), note the following points when MX Component was installed on OS1 first and MX Component was then installed over the same folder on OS2.

(a) If MX Component is uninstalled first on the OS2 side, uninstallation does not delete the control DLLs and ACT folders, and they remain within the IBM-PC/AT compatible.
To delete the control DLLs and ACT folders, perform uninstallation also on the OS1 side.

(b) If MX Component is uninstalled first on the OS1 side, the control DLLs and ACT folders are deleted.
In this case, MX Component may not operate properly or cannot be uninstalled on the OS2 side.
Install MX Component again on the OS2 side to operate MX Component properly or uninstall it on the OS2 side.

(3) About start menu
When you have uninstalled MX Component, the item may remain in the start menu.
In that case, restart the IBM-PC/AT compatible personal computer.

(1) About transmission speed
As the transmission speed of the QCPU(Q mode) and QCPU(A mode), you can set 9600bps, 19200bps, 38400bps, 57600bps or 11520bps.
For the QnACPU of version 9707B or later, you can set the transmission speed of 9600bps, 19200bps or 38400bps.
For the QnACPU of other versions, you can set 9600bps or 19200bps.
The transmission speeds of the ACPU (except A2USHCPU-S1), FXCPU and motion controller CPU are fixed to 9600bps. (The A2USHCPU-S1 may be set to 19200bps.)

(2) Precautions for USB communication
Frequently disconnecting/reconnecting the USB cable or resetting or powering ON/OFF the PLC CPU during communications with the PLC CPU may cause a communications error which cannot be recovered.
If it is not recovered, completely disconnect the USB cable once and then reconnect it after 5 or more seconds have elapsed.
(If this error occurs at the initial communication after the above operation, the function will be performed properly in and after the second communications.)

(3) About clock data of the PLC CPU

  (a) For the ACPU (including the motion controller CPU), clock data setting may be made only when the PLC CPU is in the STOP status.
  For the QCPU (Q mode), QCPU (A mode), QnACPU and FXCPU, clock data setting may be made if the PLC CPU is in the RUN status.

  (b) For the A0J2HCPU, A2CCPU and A2CJCPU, setting cannot be made as they do not have the clock function.

  (c) For the ACPU, setting can be made independently of whether the clock setting special relay "M9028" is ON or OFF. (Note that the special relay "M9028" turns OFF after execution.)
  For the QCPU (Q mode), QCPU (A mode) and QnACPU, setting can be made independently of whether the clock setting device "SM1028" is ON or OFF.

  (d) Among the FXCPUs, setting may be made for only the FX1N (clock built-in), FX1NC (clock built-in), FX1S (clock built-in), FX2N (clock built-in), FX2NC (when RTC cassette is fitted), FX2 (when RTC cassette is fitted) and FX2C (when RTC cassette is fitted).

  (e) Note that an error for transfer time will be produced in clock setting.

(4) Precautions for use of Q4ARCPU
The duplexing function cannot be used.

(5) Restrictions on use of the FXCPU

  (a) When the FXCPU is used, access to the TN devices (timer present values) or CN devices (counter present values) is not permitted if the device numbers specified are split across 199 or earlier and 200 or later.

  (b) As the FXCPU does not have a PAUSE switch as the PLC CPU, an error is returned if remote pause is specified in SetCpuStatus.

  (c) Note that specifying the first I/O number of a nonexisting module and executing the WriteBuffer( ) method will not return an error.

  (d) For the index registers (Z, V) of the FXCPU, data cannot be written to 2 or more consecutive points using WriteDeviceBlock(). (Data may be written to only one point.)

(6) Serial communication function of Q00J/Q00/Q01CPU
When the following conditions are all satisfied, communication between the personal computer and the Q00J/Q00/Q01CPU is made at 9600bps speed.
1) The connected CPU is the Q00CPU or Q01CPU

  2) The serial communication function of the connected CPU is valid.

  3) The personal computer side baud rate setting differs from the Q00J/Q00/Q01CPU side baud rate setting.

  To increase the communication speed, match the personal computer side baud rate with the Q00J/Q00/Q01CPU side baud rate.

(1) About simultaneous use of MX Component and GX Developer
When using GX Developer and MX Component together for the same E71 module to make Ethernet communication, make the following settings.
(a) Set the protocol of the communication setting wizard screen to "UDP/IP".

(b) Set "SW2" of the communications setting switches of the E71 module to OFF (binary).

(2) Precautions for GX Simulator communication
Before executing the monitor utility, communication setting utility or user program, make sure that GX Simulator and GX Developer are operating.
In addition, do not terminate the GX Simulator and GX Developer while the user program is running.
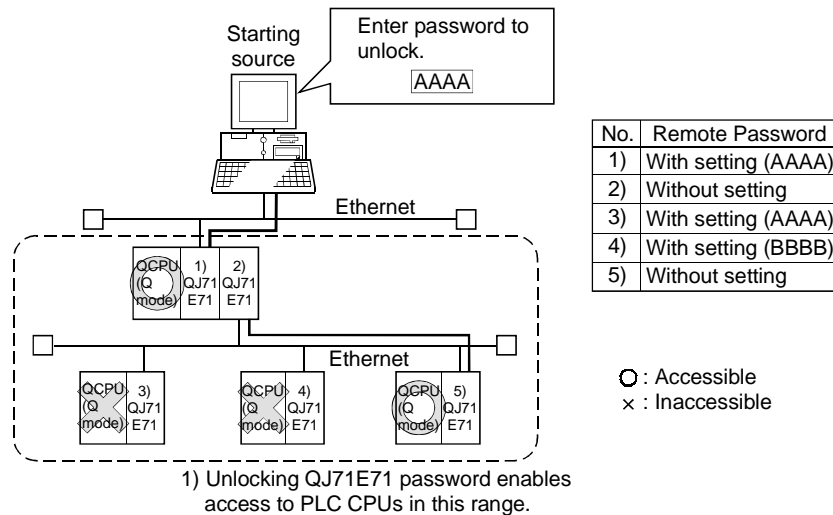If you do so, you will not be able to terminate the user program normally.

(1) Resetting PLC CPU during TCP/IP connection setting
If you reset the PLC CPU during TCP/IP connection setting (during opening) using MX Component, a communication or receive error will occur at the time of communication after that. In that case, close the application that uses MX Component and then perform open processing again.

(2) About target existence check starting interval∗1 of Ethernet module
If close processing (Close) is executed from the IBM-PC/AT compatible, the Ethernet module may not perform close processing (Close).
One of its causes is the open cable.
If open processing (Open) is executed from the IBM-PC/AT compatible with the Ethernet module not performing close processing (Close), open processing (Open) from the IBM-PC/AT compatible is not terminated normally until the Ethernet module makes a target existence check and executes close processing (Close).
If you want to terminate open processing (Open) early from the IBM-PC/AT compatible, shorten the target existence check starting interval setting of the Ethernet module.
(The target existence check starting interval setting of the Ethernet module defaults to 10 minutes.)
∗1: It can be set for the E71 of AJ71E71-S3 or later.

(3) Replacement of Ethernet module
If you changed the Ethernet module during Ethernet communication due to debugging, failure or like, the other node (IBM-PC/AT compatible) must be restarted.
(Since the Ethernet addresses (MAC addresses) differ between devices)

(4) Simultaneous access when using Q series-compatible Ethernet module
The following conditions should be satisfied when communication is to be made simultaneously from multiple IBM-PC/AT compatibles to the same module using the TCP/IP protocol.
• Q series-compatible E71 module (except QJ71E71-100) whose first five digits of the serial number is "02122" or later and whose function version is B or later.
• Using GX Developer Version 6.05F or later, set "MELSOFT connection" in the Ethernet parameter "open system".

(5) Unlocking password when using QJ71E71
The range where the password can be unlocked by remote operation is up to the connection target station.
If the password is set also on the lower layer, communication cannot be made with the PLC CPU on the lower layer.

No.	Remote Password
1)	With setting (AAAA)
2)	Without setting
3)	With setting (AAAA)
4)	With setting (BBBB)
5)	Without setting

○ : Accessible
✕ : Inaccessible

1) Unlocking QJ71E71 password enables access to PLC CPUs in this range.

(6) About use of the Q4ARCPU
When using the UDP/IP protocol of Ethernet communication, use the Q4ARCPU whose year and month of manufacture is "0012" or later and whose function version is B or later.

(7) About Ethernet communication
(a) When access is made to the QnACPU, AnUCPU, QCPU (A mode) or motion controller CPU via the E71, the device range is equivalent to that of the AnACPU.

(b) When making access to the PLC CPU through Ethernet communication, the functions may not be executed depending on the PLC CPU status.
1) When the protocol is TCP/IP (target module: E71, QE71)
The functions can be executed only when the communication target PLC CPU is in the RUN mode.
An error is returned if the PLC CPU is in other than the RUN mode.
2) When the protocol is UDP/IP (target module: E71, QE71)
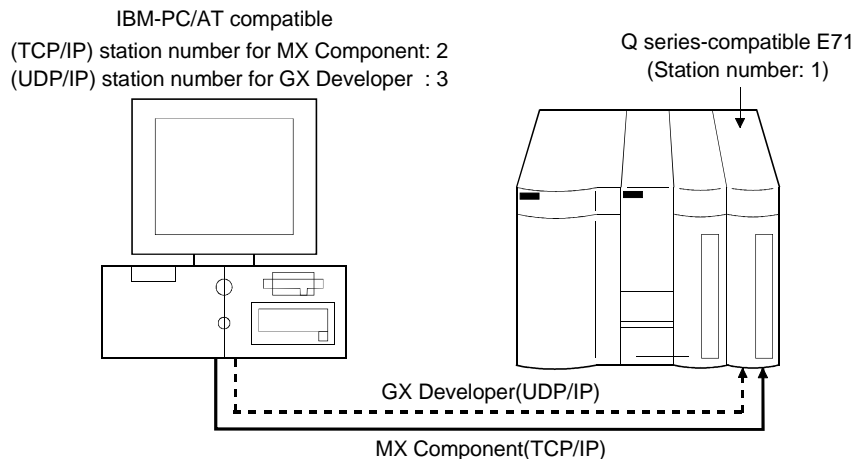The functions cannot be executed until the communication target PLC CPU is RUN once.
An error is returned if the PLC CPU has not been RUN once.

(c) The communication line is broken if the CPU becomes faulty or the Ethernet module is reset during Ethernet communication (when the protocol is TCP/IP).
In that case, perform line close processing (Close) and then execute reopen processing (Open).

(d) When two different communication systems (protocols) are used to make access from one IBM-PC/AT compatible to one Q series-compatible E71, two station numbers, i.e. for TCP/IP and for UDP/IP, must be set.

(Example) When MX Component uses TCP/IP and GX Developer uses UDP/IP

IBM-PC/AT compatible
(TCP/IP) station number for MX Component: 2
(UDP/IP) station number for GX Developer : 3

Q series-compatible E71
(Station number: 1)

GX Developer(UDP/IP)

MX Component(TCP/IP)

Set different station numbers as the (TCP/IP) station number for MX Component and (UDP/IP) station number for GX Developer. If they are set to the same station number, an error will occur on the Ethernet module side.

(8) About switch settings of E71 and QE71
If the four lower digits of the error code that occurred during Ethernet communication using the E71 or QE71 is not indicated in the E71 or QE71 manual, check the DIP switch (SW2) setting of the E71 or QE71.
If the DIP switch is not set correctly, a difference has occurred in the packet format (ASCII/binary) and therefore the error code returned from the module cannot be recognized correctly.

| Instructions for use of CC-Link modules |

(1) Software version of CC-Link master/local module
As the CC-Link master/local module used in CC-Link communication or CC-Link G4 communication(only when the AJ65BT-G4 is used), use the module of software version "N" or later.
The module of software version "M" or earlier will not operate properly.

(2) Software version of CC-Link G4 module
As the CC-Link G4 module used in CC-Link G4 communication(only when the AJ65BT-G4 is used), use the module of software version "D" or later.
The module of software version "C" or earlier will not operate properly.

| Instructions for use of MELSECNET(II), MELSECNET/10 and MELSECNET/H |

(1) About relaying from the MELSECNET/10 loaded station
When the module is loaded to the AnNCPU or AnACPU, it is recognized as a MELSECNET(II) module.
When the connected station is the AnNCPU or AnACPU, set the relayed network as MELSECNET(II).
In addition, set the station number to "0" when making access to the control station.

(2) Instructions for relaying the MELSECNET(II)
When access is made to the QnACPU, AnUCPU, QCPU (A mode) or motion controller CPU via the MELSECNET(II), the device range is equivalent to that of the AnACPU.

Instructions for use of computer link and serial communication modules

(1) About computer link communication
(a) If the connected station CPU is the AnUCPU and the computer link module is the UC24 for computer link connection, remote operation will result in an error when access is made to the AnNCPU, AnACPU or QnACPU via the MELSECNET/10.

(b) On any computer link modules other than the UC24 and C24, remote "PAUSE" operation will result in an error for all connections.

(c) For the QC24, note that the illegal case of specifying the first I/O number of a nonexisting module and reading/writing U∗∗\G∗∗ will not return an error if the software version of the module is "k" or earlier.

(d) In any connection form (direct coupling, relaying) where the target station of the UC24 or C24 is the QnACPU, an error is returned if clock data read/write is executed.

(2) Precautions for connecting personal computer and serial communication module
(a) When QJ71C24-R2 of function version A is used
An MX Component application can use only either of CH1 and CH2.
When the MELSOFT product, such as GX Developer or GOT, is using one channel, the application cannot use the other channel.
When the QJ71C24-R2 of function version B is used, the application can use both channels.

(b) When AJ71QC24-R2 or A1SJ71QC4-R2 is used
The MX Component application can use only CH1.
It cannot use CH2.

Instructions for modem communication

(1) Simultaneous modem communications
It is not allowed to simultaneously perform modem communications using MX Component and other application such as GX Developer.
Do not perform a modem communication using other applications during a modem communication using MX Component.
If modem communications are simultaneously performed using MX Component and other application, this will result in a communication error, disconnection of telephone line or similar problem.

(2) Instructions for use of telephone line
(a) Do not use the call-waiting phone line.
On the call-waiting phone line, data corruption, telephone line disconnection or similar may occur due to interrupt reading sounds.

(b) Do not connect the line to master/slave phones.
If the handset of the slave phone is lifted while the telephone line is connecting to the master/slave phones, the telephone line may be disconnected.

(c) Use an analog 2 wire type telephone line.
When using a digital line, use a terminal adaptor.
When the telephone line is of 4 wire type, the line may not be connected depending on the wiring type of the modular jack.
For the 4 wire type, conduct connection tests in advance to check for connection.

(3) Instructions for use of cellular phone
(a) Modem for radio communication using a cellular phone
Although the modem name is different depending on the maker, the modem is generically referred to as the cellular phone communication unit in this manual.
Select the model of the cellular phone communication unit according to the cellular phone used.
For details, contact the company of your cellular phone.

(b) Cellular phone without auto answer function
For the cellular phone without auto answer function, use a cellular phone communication unit that has the ANS/ORG/TEL select switch.
If the cellular phone communication unit does not have the ANS/ORG/TEL select switch, it is impossible to connect the line.
The line connection procedure is different depending on the cellular phone company and cellular phone model.
For details, contact the maker of your cellular phone.

| Instructions for programming |

(1) About sample programs, test programs and sample sequence programs
(a) Sample programs, test programs
The sample programs are attached for your reference to create user programs.
The test programs are attached to conduct communication tests.
Use these programs on your own responsibility.

(b) Sample sequence programs
The sample sequence programs attached to MX Component must be modified depending on the system configuration and parameter settings.
Modify them to be best for the system.
Please note that it is user's responsibility to use the same sequence programs.

(2) About forced termination of processes during communication
If communication is being made with the same type of control open for multiple processes, forcing one process to be terminated by Task Manager or the like may stop the other processes at the communication function execution area.

(3) About error at communication start
A communication error may occur within the preset time-out period at a communication start, e.g. when the communication diagnostic button is pressed, at a monitor start, or at the execution of any function.
These errors are assumed to be detected before a time-out error.
(Example: Connection cable not connected, at PLC power-off)

(4) CheckDeviceString
   Do not use the CheckDeviceString method of each ACT control.

(5) About ActUMsg control, ActUWzd control, ActMnet2BD control and ActAFBD control
   Installing MX Component registers the ActUMsg control, ActUWzd control, ActMnet2BD control and ActAFBD control, but do not use them.

(6) Precautions for use of Act(ML)QJ71E71TCP, Act(ML)AJ71QE71TCP and Act(ML)AJ71E71TCP controls
   (a) Provide an interval longer than the sequence scan time of the Ethernet module loaded station from when the Open method is executed until the Close method is executed.

   (b) Provide an interval of at least 500ms from when the Close method is executed until the Open method is executed again.

(7) Instructions for use of Disconnect
   If execution of Disconnect cannot disconnect the telephone line for some reason, power off the modem used to make a call to forcibly disconnect the telephone line.

Instructions for use of Microsoft® Excel

(1) Precautions for starting multiple Excel files on Windows® Me
   Note that Windows® Me has been confirmed to stop if you run multiple Excel files which use many control objects.
   ✳ This phenomenon is not attributable to this product.
   (a) Conditions on which this phenomenon has been confirmed to occur
      Graphic driver   : Matrox make MGA Mystique display driver
      OS   : Windows® Me (English version)
      Number of controls pasted to Excel files : A total of 150 or more controls
                                                        used in the whole BOOK
      <Other devices checked by Mitsubishi (reference)>
         CPU   : Pentium® 166MHz
         Memory   : 64MB
         Hard disk : 8GB (free space 6GB)

   (b) Cause
      The phenomenon has been confirmed to occur when the Matrox make MGA Mystique graphic card display driver is used.
      This is because Version 4.12 of the MGA Mystique graphic card display driver is not compatible with Windows® Me.

   (c) How to judge whether the phenomenon is the same or not
      After changing the used graphic driver for the standard VGA driver, delete the temporary data (*.emf) left in the temporary folder.
      After that, try starting multiple Excel files.
      The phenomenon seems to be the same if it does not occur by changing the driver for the standard VGA driver.

(d) Corrective action
   If this phenomenon occurs, the temporary data (*.emf) will be left in the
   temporary folder of the system.
   You have to delete the remaining temporary data (*.emf) manually.
   The temporary folder of the system is normally in C:\Temp.
   After that, take either of the following actions.
   1) Use the graphic card and display driver which support Windows® Me.
   2) Reduce the number of control objects pasted to the Excel files.

(2)　Precautions for use of EXCEL VBA
   Do not set the page feed preview function in the application that uses EXCEL
   VBA.
   Doing so can cause a memory leak or OS basic operation (file operation,
   printing or other) fault.

(3)　Precautions for use of Microsoft® Excel 2000 or Microsoft® Excel 2002
   (a) If you paste the control to Excel 2000 or Excel 2002, it may sometimes not
      be pasted.
      This phenomenon occurs if the cache file (temporary file) of Excel 2000 or
      Excel 2002 remains.
      In such a case, perform operation in the following procedure.
      1) Close Excel 2000 or Excel 2002.
      2) Delete *.exd in the Excel 8.0 folder of the temp folders.
      3) Restart Excel 2000 or Excel 2002.
   (b) Excel 2000 allows ACT control resizing, which does not affect the operation
      of MX Component.
      To restore the size, set the Height and Width properties of ACT control to
      "24" again.

Instructions for use of Microsoft® Access

(1)　Precautions for use of Microsoft® Access 2000 or Microsoft® Access 2002
   (a) When you paste the ACT control to an Access 2000 form or an Access 2002
      form and double-click the ACT control or choose the custom control in the
      property, the following error message will appear but this does not affect the
      operation of ACT control.
      (Other error message may appear.)

   (b) When you paste the ACT control and display the properties, the property
      names displayed may be broken.
      As this phenomenon occurs for only the property indication, there will be no
      problem in the property functions.

| Instructions for use of VBScript and ASP function |

(1) Security of the Internet/intranet when using VBScript
MX Component does not have the Internet/intranet security function.
When you need the security function, make setting on the user side.

(2) Precautions for making CPU COM communication, computer link communication, CC-Link G4 communication or Ethernet (TCP/IP) communication on ASP page and application＊1 when Windows® 2000 Professional is used.
If the ASP page opens CPU COM, computer link, CC-Link G4 or Ethernet (TCP/IP) communication earlier than the application, communication in the same path cannot be made on the application until the ASP page is closed. Therefore, note the following points.
(a) CPU COM, computer link, CC-Link G4 or Ethernet (TCP/IP) communication should be opened on the application earlier.
After it has been opened on the application, communication can be made on both the application and ASP page until it is closed.

(b) When CPU COM, computer link, CC-Link G4 or Ethernet (TCP/IP) communication has been opened on the ASP page, always close the communication.

＊1 The application indicates any of the user applications created using the MX series and MELSOFT products.

INTRODUCTION

Thank you for choosing the Mitsubishi MELSOFT series comprehensive Factory Automation software.
Read this manual and make sure you understand the functions and performance of MELSOFT series
thoroughly in advance to ensure correct use.

CONTENTS

1 OVERVIEW	1- 1 to 1- 6

2 SYSTEM CONFIGURATIONS	2- 1 to 2-20

3 OPERATION PROCEDURES	3- 1 to 3- 6

Manuals

The following lists the manuals for this software package.
Refer to the following table when ordering manuals.

Related Manuals

Manual Name	Manual Number (Model Code)
MX Component Version 3 Operating Manual (Startup) Provides procedures for installing and uninstalling MX Component and for browsing the operating manual. (Sold separetely)	SH-080270 (13JU31)
MX Component Version 3 Programming Manual Provides the programming procedures, detailed explanations and error codes of the ACT controls. (Sold separately)	SH-080272 (13JF66)
Type A70BDE-J71QLP23/A70BDE-J71QLP23GE/A70BDE-J71QBR13/A70BDE-J71QLR23 MELSECNET/10 Interface Board User's Manual(For SW3DNF-MNET10) Describes the features, specifications, part names and setting of the MELSECNET/10 board, and the installation, uninstallation and others of the driver. (Sold separately)	IB-0800035 (13JL93)
Type A80BDE-J61BT11 Control & Communication Link System Master/Local Interface Board User's Manual (For SW4DNF-CCLINK-B) Describes the features, specifications, part names and setting of the CC-Link master board, and the installation, uninstallation and others of the driver. (Sold separately)	IB-0800175 (13JR28)
Type A80BDE-J61BT13 Control & Communication Link System Local Interface Board User's Manual (For SW4DNF-CCLINK-B) Describes the features, specifications, part names and setting of the CC-Link local board, and the installation, uninstallation and others of the driver. (Sold separately)	IB-0800176 (13JR29)
Type A80BDE-A2USH-S1 PLC CPU Board User's Manual (For SW1DNF-ANU-B) Describes the features, specifications, part names and setting of the CPU board, and the installation, uninstallation and others of the driver. (Sold separately)	IB-0800174 (13JR27)
MELSECNET/H Interface Board User's Manual(For SW0DNC-MNETH-B) Describes the features, specifications, part names and setting of the MELSECNET/H board, and the installation, uninstallation and others of the driver. (Sold separately)	SH-080128 (13JR24)

Note: The MX Component Version 3 Operating Manual (Startup) and MX Component Version 3 Programming Manual are contained in the CD-ROM together with the software package as a set.
When you want to purchase the manual alone, it is optionally available as the printed matter of the manual number (Model code) in the above table.

How to Use This Manual

"HOW TO USE THIS MANUAL" is given purpose-by-purpose for use of MX Component.
Refer to the following outlines and use this manual.

(1) To know the features (Section 1.1)
    Section 1.1 gives the features.

(2) To know the system configurations (Sections 2.1, 2.2)
    The system configurations using MX Component are provided.

(3) To know the MX Component operating environment and usable PLC CPUs
    (Sections 2.3, 2.4)
    Section 2.3 gives the operating environment of MX Component and Section 2.4
    indicates usable PLC CPUs.

(4) To know the MX Component operating procedures (Chapter 3)
    Chapter 3 provides the operation procedures of MX Component.

(5) To know how to operate the utilities (Chapters 4, 5)
    Chapter 4 describes operations common to the utilities, and Chapter 5 explains
    how to operate the utilities.
    Read these chapters when using the utilities.

(6) To know the communication setting examples of the utility setting type
    (Chapter 6)
    Chapter 6 gives the setting example of each communication path using the utility
    setting type.

(7) To know the communication setting examples of the program setting type
    (Chapter 7)
    Chapter 7 provides the setting example of each communication path using the
    program setting type.

(8) To know the accessible devices and ranges (Chapter 8)
    Chapter 8 contains the accessible devices and accessible ranges.

Generic Terms and Abbreviations

Unless otherwise started, this manual uses the following abbreviations and terms for the explanation of MX Component.

Generic Term/Abbreviation	Description
MX Component	Generic product name of the product types SWnD5C-ACT-E and SWnD5C-ACT-EA. (n denotes any versions 0 or later.) -EA means a volume-license product.
IBM-PC/AT compatible	Abbreviation of the IBM PC/AT or its compatible personal computer
PC CPU module	Abbreviation of the MELSEC-Q series compatible PC CPU module (CONTEC CO., LTD. make).
GX Developer	Generic product name of the product types SWnD5C-GPPW-E, SWnD5C-GPPW-EA, SWnD5C-GPPW-EV and SWnD5C-GPPW-EVA. (n denotes any of versions 0 or later.) -EA means a volume-license product, and -EV an updated product.
GX Simulator	Generic product name of the product types SWnD5C-LLT-E, SWnD5C-LLT-EA, SWnD5C-LLT-EV and SWnD5C-LLT-EVA. (n denotes any of versions 0 or later.) -EA means a volume-license product, and -EV an updated product.
MELSECNET/10 board	Abbreviation of Type A70BDE-J71QLP23/A70BDE-J71QLP23GE/A70BDE-J71QBR13/A70BDE-J71QLR23 MELSECNET/10 interface board
MELSECNET/H board	Abbreviation of Type Q80BD-J71LP21-25/Q80BD-J71LP21G/Q80BD-J71BR11 MELSECNET/H board
CC-Link board	Abbreviation of Type A80BDE-J61BT11 CC-Link system master/local interface board and Type A80BDE-J61BT13 CC-Link interface board
CPU board	Abbreviation of Type A80BDE-A2USH-S1 PLC CPU board
AnNCPU	Generic term of the A0J2HCPU, A1SCPU, A1SCPU-S1, A1SCPUC24-R2, A1SHCPU, A1SJCPU, A1SJHCPU, A1NCPU, A2CCPU, A2CCPUC24, A2CCPUC24-PRF, A2CJCPU, A2NCPU, A2NCPU-S1, A2SCPU, A2SCPU-S1, A2SHCPU, A2SHCPU-S1, A3NCPU and A1FXCPU
AnACPU	Generic term of the A2ACPU, A2ACPU-S1, A2ACPUP21/R21, A2ACPUP21-S1, A3ACPU and A3ACPUP21/R21
AnUCPU	Generic term of the A2UCPU, A2UCPU-S1, A2USCPU, A2USCPU-S1, A2ASCPU, A2ASCPU-S1, A2ASCPU-S30, A2USHCPU-S1, A3UCPU and A4UCPU
QnACPU	Generic term of the Q2ACPU, Q2ACPU-S1, Q2ASCPU, Q2ASCPU-S1, Q2ASHCPU, Q2ASHCPU-S1, Q3ACPU, Q4ACPU and Q4ARCPU
ACPU	Generic term of the AnNCPU, AnACPU and AnUCPU
QCPU (A mode)	Generic term of the Q02CPU-A, Q02HCPU-A and Q06HCPU-A
QCPU (Q mode)	Generic term for Q00JCPU, Q00CPU, Q01CPU, Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU, and Q25PHCPU. Note that especially when the CPU is indicated as a different model, Q00JCPU, Q00CPU and Q01CPU are described as the Q00J/Q00/Q01CPU, and Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU and Q25HCPU as Q02/Q02H/Q06H/Q12H/Q25HCPU. In addition, Q12PHCPU and Q25PHCPU are described as the Process CPU.
FXCPU	Generic term of the FX0, FX0S, FX0N, FX1, FX1N, FX1NC, FX1S, FX2, FX2C, FX2N and FX2NC series
Motion controller CPU	Generic term of the A171SHCPU, A172SHCPU, A173UHCPU, A173UHCPU-S1, A273UHCPU and A273UHCPU-S3
PLC CPU	Generic term of the QCPU(Q mode), QCPU(A mode), QnACPU, ACPU, FXCPU and motion controller CPU
C24	Generic term of the A1SCPUC24-R2, A1SJ71C24-PRF, A1SJ71C24-R2, A1SJ71C24-R4, A2CCPUC24, A2CCPUC24-PRF, AJ71C24-S6 and AJ71C24-S8
UC24	Generic term of the AJ71UC24, A1SJ71UC24-R2, A1SJ71UC24-R4 and A1SJ71UC24-PRF
QC24	Generic term of the AJ71QC24, AJ71QC24-R2, AJ71QC24-R4, A1SJ71QC24-R2 and A1SJ71QC24-R2
QC24N	Generic term of the AJ71QC24N, AJ71QC24N-R2, AJ71QC24N-R4, A1SJ71QC24N and A1SJ71QC24N-R2
QC24(N)	Generic term of the QC24 and QC24N
Q series-compatible C24	Generic term of the QJ71C24 and QJ71C24-R2

Generic Term/Abbreviation	Description
Computer link module (Serial communication module)	Generic term of the C24, UC24, QC24(N) and Q series-compatible C24 Described as the serial communication module especially to indicate the QC24(N) or Q series-compatible C24.
E71	Generic term of the AJ71E71, AJ71E71-S3, A1SJ71E71-B2, A1SJ71E71-B5, A1SJ71E71-B2-S3, A1SJ71E71-B5-S3, AJ71E71N-B2, AJ71E71N-B5T, A1SJ71E71N-B2 and A1SJ71E71N-B5T
QE71	Generic term of the AJ71QE71, AJ71QE71-B5, A1SJ71QE71-B2, A1SJ71QE71-B5, AJ71QE71N-B2, AJ71QE71N-B5T, A1SJ71QE71N-B2 and A1SJ71QE71N-B5T
Q series-compatible E71	Generic term of the QJ71E71, QJ71E71-B2 and QJ71E71-100
Ethernet module	Generic term of the E71, QE71 and Q series-compatible E71
CC-Link G4 module	Generic term of the AJ65BT-G4 GPP function peripheral connection module and the AJ65BT-G4-S3 GPP function peripheral connection module
A6TEL	Abbreviation of A6TEL modem interface module.
Q6TEL	Abbreviation of Q6TEL modem interface module.
GOT	Abbreviation of Graphic Operation Terminal.
Computer link communication (Serial communication)	Abbreviation of communication made with the PLC CPU using the computer link module Described as serial communication especially in communication that uses the QC24(N) or Q series-compatible C24.
Ethernet communication	Abbreviation of communication made with the PLC CPU using the Ethernet module
CPU COM communication	Abbreviation of communication made by connecting the IBM-PC/AT compatible to the RS-232 or RS-422 connector of the PLC CPU
CPU USB communication	Abbreviation of communication made by connecting the IBM-PC/AT compatible to the USB connector of the QCPU (Q mode)
MELSECNET/10 communication	Abbreviation of communication made with the PLC CPU using the MELSECNET/10 board
MELSECNET/H communication	Abbreviation of communication made with the PLC CPU using the MELSECNET/H board
CC-Link communication	Abbreviation of communication made with the PLC CPU using the CC-Link board
CC-Link G4 communication	Abbreviation of communication made with the PLC CPU using the CC-Link G4 module
CPU board communication	Abbreviation of communication made with the PLC CPU using the CPU board
Q series bus communication	Abbreviation of communication made with the PLC CPU on the same base using the PC CPU module
GX Simulator communication	Abbreviation of communication made with the GX Simulator
Modem communication	Abbreviation of communication made with the PLC CPU via modems using the QC24N (except the AJ71QC24N-R4), Q series-compatible C24, A6TEL, Q6TEL or FXCPU
Gateway function communication	Abbreviation of communication made with the PLC CPU and third-party PLCs using the gateway functions of the GOT
Utility setting type	Abbreviation of user program creation using the communication settings utility
Program setting type	Abbreviation of user program creation without using the communication settings utility
ACT controls	Generic term of the ActiveX controls offered by MX Component

Meanings and Definitions of Terms

The terms used in this manual have the following meanings and definitions.

(1) Logical station number
The connection target information necessary to open the communication line is combined into one data using the communication setup utility, and that data is provided with a logical number.
This number may be used with the utility setting type only.

(Example) For CPU COM communication

Target information up to CPU to communicate with is combined into one data, to which logical station number is assigned.
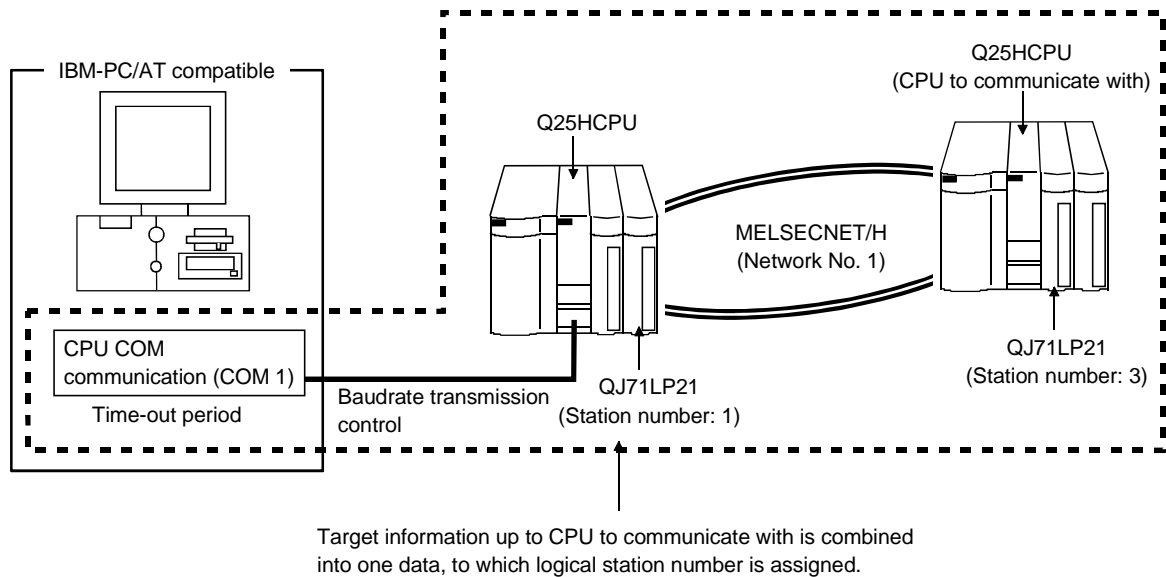
(2) Utility setting type
The communication setup utility (logical station number) is used to create a user program.
In the user program, the communication line can be connected easily by simply specifying the logical station number set on the communication setting wizard.
Use ActEasyIF and ActMLEasyIF.

(3) Program setting type
A user program is created without using the communication setup utility.
Make ACT control settings for the corresponding communication in the user program or on the property page or like of Visual Basic® or Visual C++® .
The properties necessary to be set depend on the ACT control.
Use the control other than ActEasyIF and ActMLEasyIF.

1

1 OVERVIEW

MX Component is a tool designed to implement communication from an IBM-PC/AT compatible personal computer to the PLC without any knowledge of communication protocols and modules.
Use of common functions has made it extremely easy to develop serial communication and Ethernet communication programs which had been troublesome and complex.

1.1 Features

MX Component has the following features.

(1) Support of a wide range of communication paths for PLC
A wide range of communication paths to the PLC are supported to enable the user to configure up a system as desired.

1
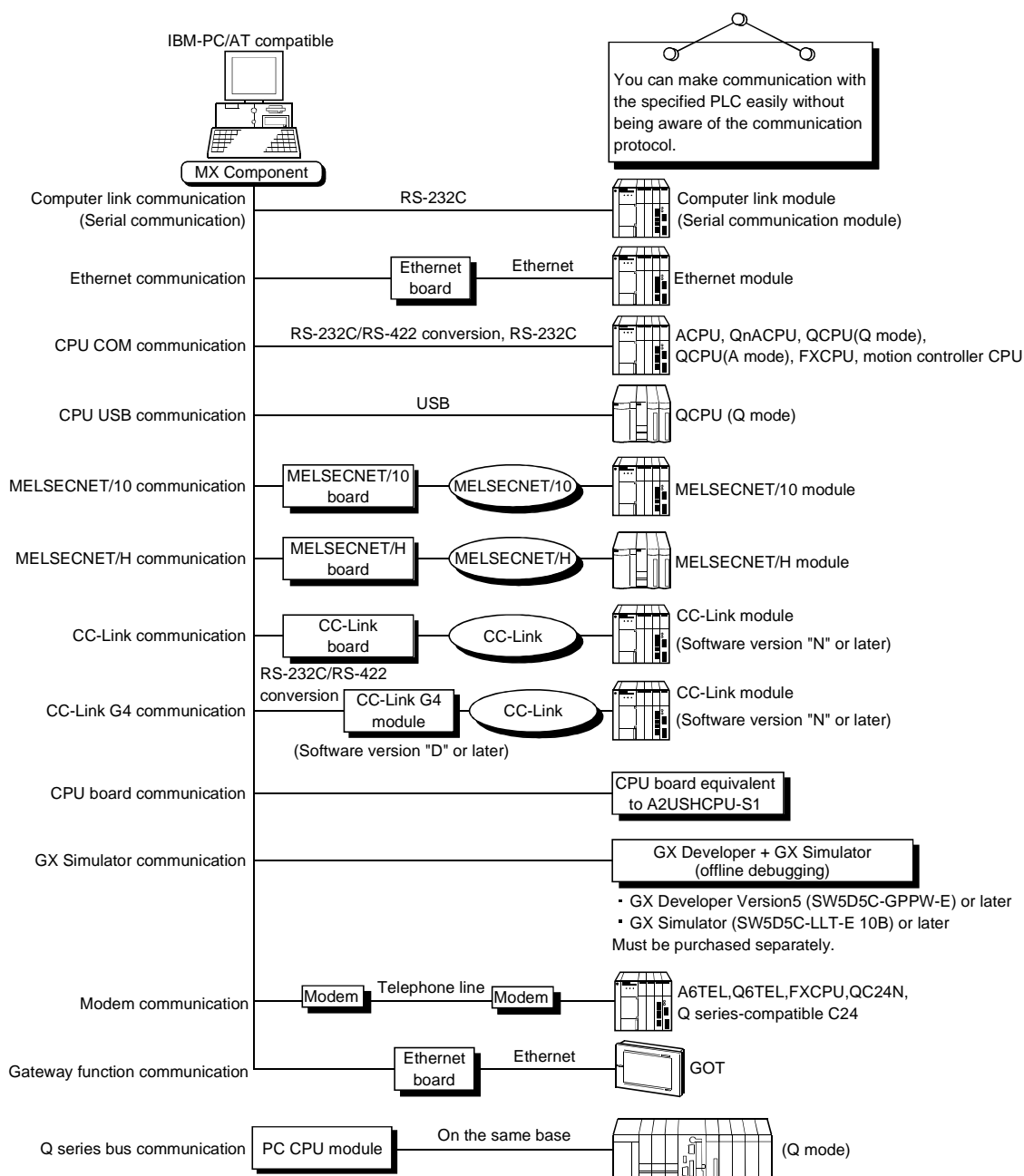
(2) Substantial improvement in user's development efficiency

MX Component comes with the wizard type communication setup utility.
By simply making interactive settings on the screen, the user can achieve
communication settings to access the PLC CPU to communicate with.
Once the communication settings have been made, access can be made by
merely specifying the logical station number of the PLC stored on the
communication setup utility.

(3) Save and read of communication settings

MX Component has the functions to save and read the communication settings
made on the communication setup utility.
You can move the set data easily from the IBM-PC/AT compatible used for
development to the actually used IBM-PC/AT compatible.
Note: MX Component must have been installed in both the IBM-PC/AT
compatible used for development and the actually used IBM-PC/AT
compatible.
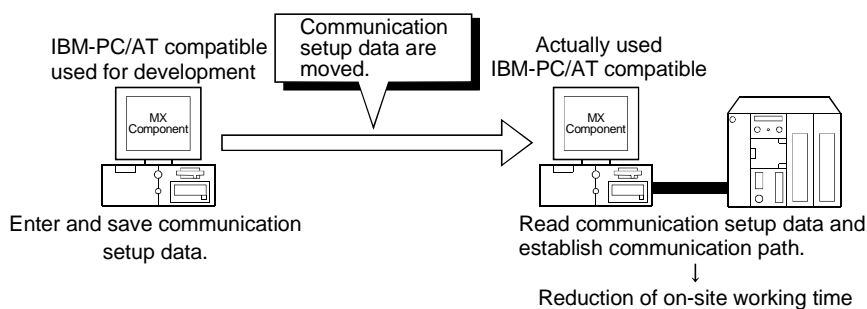
(4) Device monitor function

Utilizing the PLC monitor utility enables you to monitor the status of the specified
device and change its data.
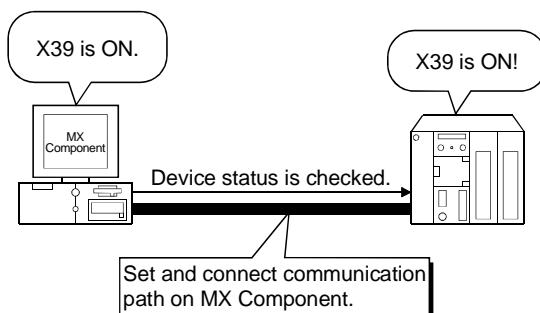
(5) Access to buffer memory of special function module

Access can be made to not only the devices of the PLC CPU but also the buffer
memory of an intelligent function or special function module.
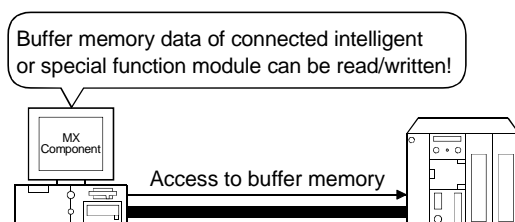
(6) Read/write of PLC CPU clock data
You can read and write the clock data of the PLC CPU connected to the IBM-PC/AT compatible.

Clock data of connected PLC CPU can be read/written!

MX Component

Access to clock data
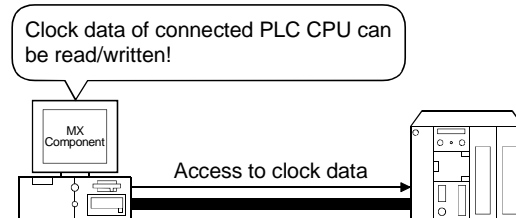
(7) Multithread communication
Access to the same communication path can be made from multiple threads at the same time.

User program 1

User program 2

Access to the same communication path can be made simultaneously.
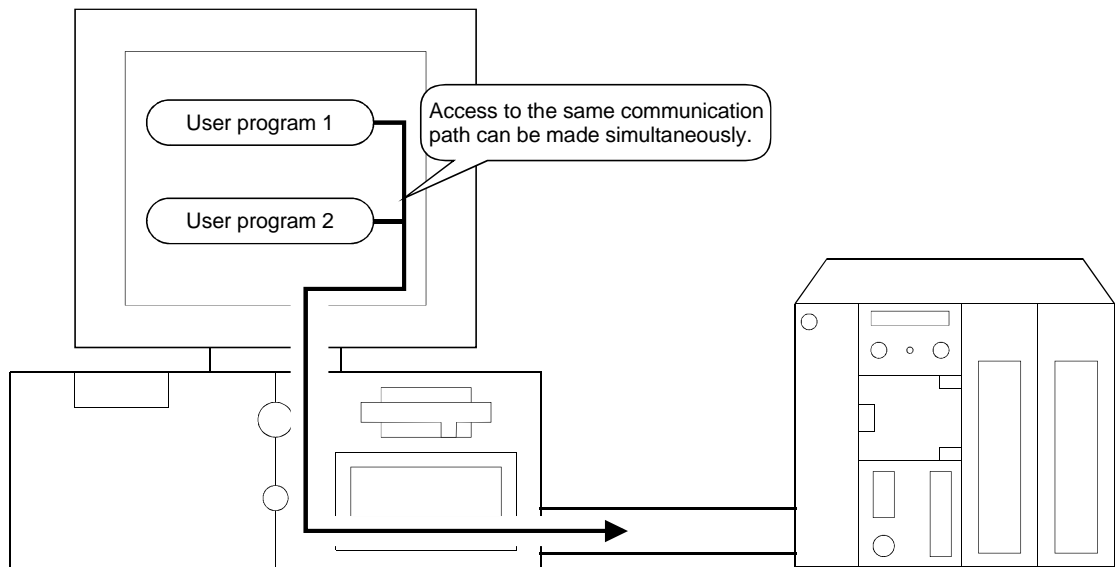
(8) GX Simulator for offline debugging
By using GX Developer and GX Simulator, you can perform debugging on a single IBM-PC/AT compatible without connecting the PLC.

You can debug by accessing GX Simulator on the same IBM-PC/AT compatible!

MX Component

IBM-PC/AT compatible

PLC

PLC CPU need not be connected.
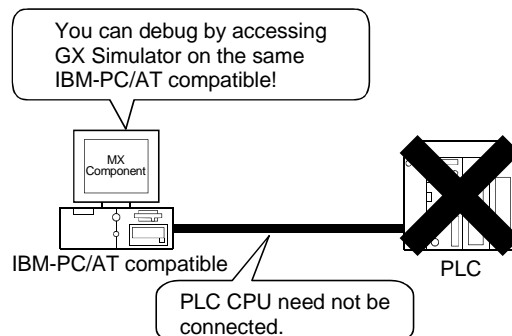
POINT

GX Developer and GX Simulator are separately required to use the GX Simulator.

(9) A wide variety of programming languages supported
MX Component supports VBScript and VBA as well as Visual Basic® and Visual
C++® .

(a) Creation of monitoring page using VBScript

1) Monitoring page can be created in HTML format
Using the text editor, you can create a graphical monitoring home
page (HTML format).
You need not purchase Visual Basic® , Visual C++® or like.

Monitoring using Internet Explorer

・ MX Component
・ Web browser
Internet Explorer 5.0 or later
・ HTML for PLC monitoring

MELSECNET/H or like
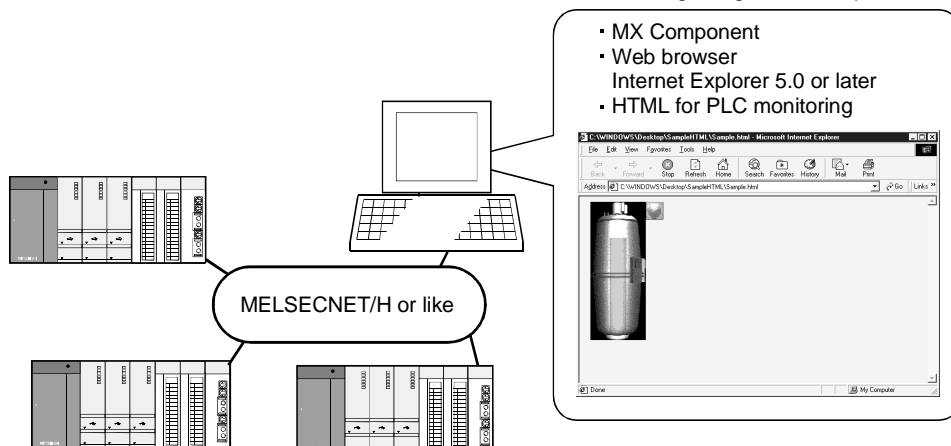
2) Using ASP function for monitoring via Internet/intranet
Using the ASP function of VBScript to make public the Web pages on
the factory side (side which monitors data using MX Component)
enables the PLC device status or fault occurrence-time remote
operation to be performed from a remote location or business
destination via the Internet/intranet by merely specifying the factory
side URL on Internet Explorer.

Internet
Intranet

<Factory side>

・ MX Component
・ PLC accessing ASP

Web server *1

*1: Web server supported by OS
(Internet Information Server,
Personal Web Server, etc.)

MELSECNET/H or like

<Office side>

Web browser
Internet Explorer 5.0 or later
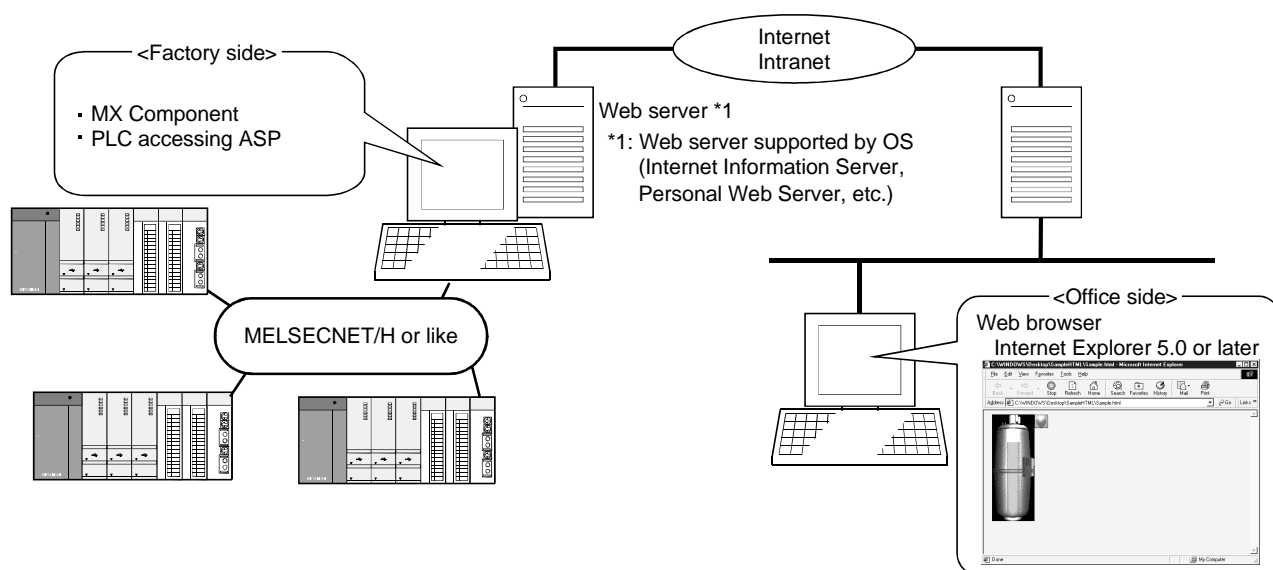
(b) VBA-driven data collection and monitoring function
Programming using VBA allows Excel or Access functions to be utilized to
create an application for providing a real-time graph display.
You can log the device data of the PLC and collect/save the device data in
real time.

<Excel>   <Access>
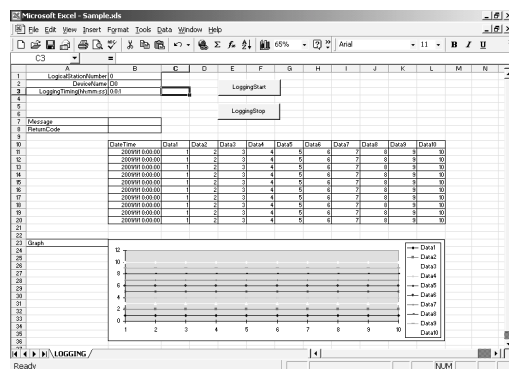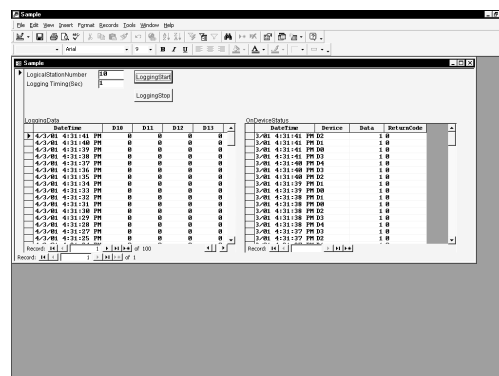
(10) Compatibility with multi-CPU system of QCPU (Q mode)
Setting the communication setting utility or ACT control properties enables
access to the multi-CPU system.

(11) Operability on PC CPU module
Q series bus communication from the PC CPU module enables access to the
QCPU (Q mode) on the same base.
Using the MELSECNET/H communication control and CC-Link communication
control enables access to other stations via the MELSECNET/H module and CC-
Link module controlled by the PC CPU module.
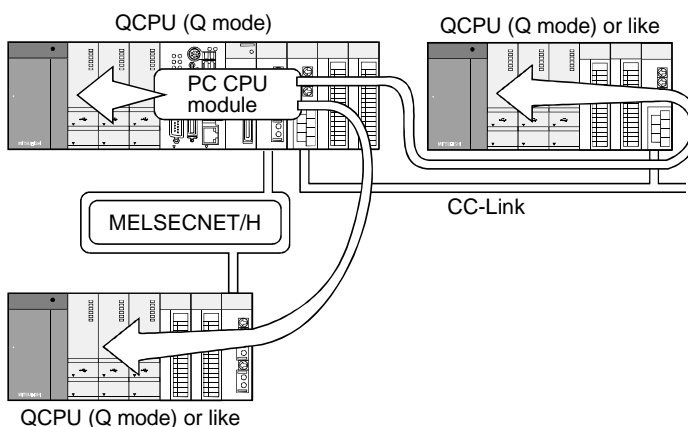
(12) Accessibility to gateway devices of GOT

Using the gateway function communication of MX Component can read/write the gateway device data of the GOT.

Reading/writing the gateway device data of the GOT can read/write the device data of the PLC CPU that is being monitored by the GOT.
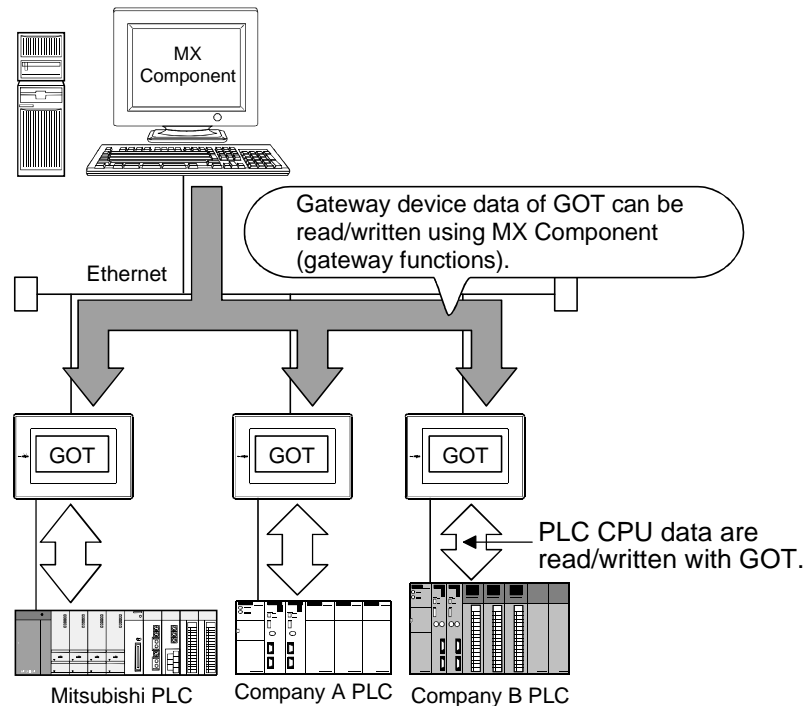
(13) Reduction of error definition search time

The ActSupport control for troubleshooting function is supported.

The error definition and corrective action appear within the user application by only specifying the error code.

This eliminates the need to find the error definition or corrective action by referring to the programming manual, if an error occurs in ACT control.

<Example of displaying error definition in message box>
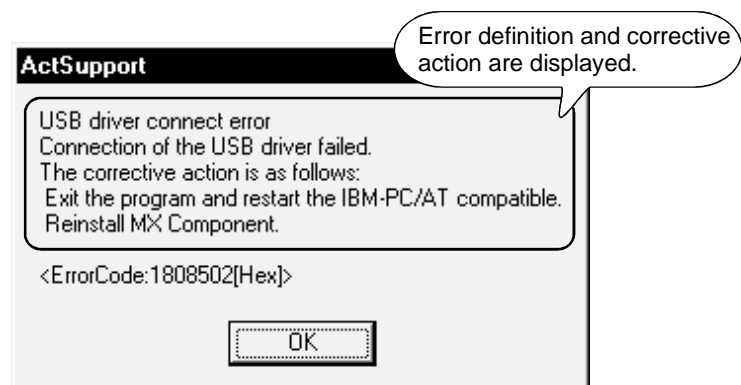
2 SYSTEM CONFIGURATIONS

This chapter describes the system configurations, operating environment and usable CPUs of MX Component.

2.1 System Configuration List

This section lists the systems that may be configured for each operating system.

2.1.1 When using Microsoft® Windows NT® Workstation Operating System Version 4.0

The following table lists the systems that may be configured for use of Windows NT® Workstation 4.0.

Item		Description
Computer link communication		○
Ethernet communication		○
CPU COM communication		○
CPU USB communication		✕ ＊1
MELSECNET/10 communication		○
	Usable board	MELSECNET/10 board
	Usable driver	SW2DNF-MNET10 or later
MELSECNET/H communication		○
	Usable board	MELSECNET/H board
	Usable driver	SW0DNC-MNETH-B or later
CC-Link communication		○
	Usable board	CC-Link board
	Usable driver	SW2DNF-CCLINK or later
CC-Link G4 communication		○
CPU board communication		○
	Usable board	CPU board
	Usable driver	SW0DNF-ANU-B or later
Q series bus communication (only when PC CPU module is used)		○
GX Simulator communication		○
Modem communication		○
Gateway function communication		○

○: Configurable ✕: Not configurable
＊1: Does not support the used OS.

POINT

Use GX Developer and GX Simulator of the following version or later when making GX Simulator communication.
• GX Developer Version 5 (SW5D5C-GPPW-E)
• GX Simulator (SW5D5C-LLT-E 10B)

2
2.1.2 When using Microsoft® Windows® 95 Operating System

The following table lists the systems that may be configured for use of Windows® 95.

Item		Description
Computer link communication		○
Ethernet communication		○
CPU COM communication		○
CPU USB communication		× *1
MELSECNET/10 communication		○
	Usable board	MELSECNET/10 board
	Usable driver	SW2DNF-MNET10 or later
MELSECNET/H communication		○
	Usable board	MELSECNET/H board
	Usable driver	SW0DNC-MNETH-B or later
CC-Link communication		○
	Usable board	CC-Link board
	Usable driver	SW2DNF-CCLINK or later
CC-Link G4 communication		○
CPU board communication		× *2
Q series bus communication (only when PC CPU module is used)		×
GX Simulator communication		○
Modem communication		○
Gateway function communication		○

○: Configurable ×: Not configurable

*1: Does not support the used OS.

*2: The driver is incompatible.

POINT

(1) On Windows® 95, a memory leak will occur if any of the following communications is made using the COM port. Therefore, do not perform continuous operation.
- Computer link communication
- CPU COM communication
- CC-Link G4 communication
- Modem communication

(2) Use GX Developer and GX Simulator of the following version or later when making GX Simulator communication.
- GX Developer Version 5 (SW5D5C-GPPW-E)
- GX Simulator (SW5D5C-LLT-E 10B)

2.1.3 When using Microsoft® Windows® 98 Operating System

The following table lists the systems that may be configured for use of Windows® 98.

Item		Description
Computer link communication		◯
Ethernet communication		◯
CPU COM communication		◯
CPU USB communication		◯ *1
MELSECNET/10 communication		◯
	Usable board	MELSECNET/10 board
	Usable driver	SW2DNF-MNET10 or later
MELSECNET/H communication		◯
	Usable board	MELSECNET/H board
	Usable driver	SW0DNC-MNETH-B or later
CC-Link communication		◯
	Usable board	CC-Link board
	Usable driver	SW2DNF-CCLINK or later
CC-Link G4 communication		◯
CPU board communication		✕ *2
Q series bus communication (only when PC CPU module is used)		✕
GX Simulator communication		◯
Modem communication		◯
Gateway function communication		◯

◯: Configurable ✕: Not configurable

*1: Usable only when Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU or Q25PHCPU is used

*2: The driver is incompatible.

POINT

Use GX Developer and GX Simulator of the following version or later when making GX Simulator communication.

• GX Developer Version 5 (SW5D5C-GPPW-E)
• GX Simulator (SW5D5C-LLT-E 10B)

2.1.4 When using Microsoft® Windows® 2000 Professional Operating System

The following table lists the systems that may be configured for use of Windows® 2000 Professional.

Item		Description
Computer link communication		○
Ethernet communication		○
CPU COM communication		○
CPU USB communication		○ *1
MELSECNET/10 communication		×
MELSECNET/H communication		○
	Usable board	MELSECNET/H board
	Usable driver	SW0DNC-MNETH-B or later
CC-Link communication		○
	Usable board	CC-Link board
	Usable driver	SW4DNF-CCLINK or later
CC-Link G4 communication		○
CPU board communication		○
	Usable board	CPU board
	Usable driver	SW1DNF-ANU-B or later
Q series bus communication (only when PC CPU module is used)		×
GX Simulator communication		○
Modem communication		○
Gateway function communication		○

○: Configurable ×: Not configurable

*1: Usable only when Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU or Q25PHCPU is used

```
POINT

Use GX Developer and GX Simulator of the following version or later when making
GX Simulator communication.
• GX Developer Version 7
• GX Simulator Version 6
```

2.1.5 When using Microsoft® Windows® Millennium Edition Operating System

The following table lists the systems that may be configured for use of Windows® Me.

Item	Description
Computer link communication	○
Ethernet communication	○
CPU COM communication	○
CPU USB communication	○ *1
MELSECNET/10 communication	×
MELSECNET/H communication	×
CC-Link communication	×
CC-Link G4 communication	○
CPU board communication	×
Q series bus communication (only when PC CPU module is used)	×
GX Simulator communication	○
Modem communication	○
Gateway function communication	○

○: Configurable ×: Not configurable

*1: Usable only when Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU or Q25PHCPU is used

POINT
(1) Use GX Developer and GX Simulator of the following version or later when making GX Simulator communication. • GX Developer Version 7 • GX Simulator Version 6 (2) The ASP function of VBScript cannot be used.

2.1.6 When using Microsoft® Windows® XP Professional Operating System

The following table lists the systems that may be configured for use of Windows® XP Professional.

Item	Description
Computer link communication	○
Ethernet communication	○
CPU COM communication	○
CPU USB communication	○ *1
MELSECNET/10 communication	×
MELSECNET/H communication	×
CC-Link communication	×
CC-Link G4 communication	○
CPU board communication	×
Q series bus communication (only when PC CPU module is used)	×
GX Simulator communication	×
Modem communication	○
Gateway function communication	○

○: Configurable ×: Not configurable

*1: Usable only when Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU,
    Q12PHCPU or Q25PHCPU is used

2.1.7 When using Microsoft® Windows® XP Home Edition Operating System

The following table lists the systems that may be configured for use of Windows® XP Home Edition.

Item	Description
Computer link communication	○
Ethernet communication	○
CPU COM communication	○
CPU USB communication	○ *1
MELSECNET/10 communication	×
MELSECNET/H communication	×
CC-Link communication	×
CC-Link G4 communication	○
CPU board communication	×
Q series bus communication (only when PC CPU module is used)	×
GX Simulator communication	×
Modem communication	○
Gateway function communication	○

○: Configurable ×: Not configurable

*1: Usable only when Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU or Q25PHCPU is used

POINT
The ASP function of VBScript cannot be used.

2.2 System Configuration for Use of Each Connection Form

This section provides the system configurations for use of MX Component on a communication form basis.

2.2.1 System configurations

IBM-PC/AT compatible

Computer link communication (Serial communication)	RS-232C	Computer link module (Serial communication module)
Ethernet communication	Ethernet board — Ethernet	Ethernet module
CPU COM communication	RS-232C/RS-422 conversion, RS-232C	ACPU, QnACPU, QCPU(Q mode), QCPU(A mode), FXCPU, motion controller CPU
CPU USB communication	USB	QCPU (Q mode)
MELSECNET/10 communication	MELSECNET/10 board — MELSECNET/10	MELSECNET/10 module
MELSECNET/H communication	MELSECNET/H board — MELSECNET/H	MELSECNET/H module
CC-Link communication	CC-Link board — CC-Link	CC-Link module (Software version "N" or later)
CC-Link G4 communication	RS-232C/RS-422 conversion CC-Link G4 module — CC-Link (Software version "D" or later)	CC-Link module (Software version "N" or later)
CPU board communication		CPU board equivalent to A2USHCPU-S1
GX Simulator communication		GX Developer + GX Simulator (offline debugging)

・ GX Developer Version5 (SW5D5C-GPPW-E) or later
・ GX Simulator (SW5D5C-LLT-E 10B) or later
Must be purchased separately.

Modem communication	Modem — Telephone line — Modem	A6TEL,Q6TEL,FXCPU,QC24N, Q series-compatible C24
Gateway function communication	Ethernet board — Ethernet	GOT
Q series bus communication	PC CPU module — On the same base	(Q mode)

2.2.2 Details of the communication forms

The table at top right of each communication format explanation indicates whether the communication format can be made up when the OSs are used.

(Example) Windows NT® Workstation 4.0 and Windows® 95 are not supported.
Windows® 98, Windows® 2000 Professional, Windows® Me, Windows® XP Professional and Windows® XP Home Edition are supported.

NT	95	98	2000	Me	XP
×	×	○	○	○	○

NT: Windows NT® Workstation 4.0, 95: Windows® 95,
98: Windows® 98, 2000: Windows® 2000 Professional,
Me: Windows® Me, XP: Windows® XP Professional,
Windows® XP Home Edition
○: Configurable ×: Not configurable

(1) Computer link communication

NT	95	98	2000	Me	XP
○	○	○	○	○	○

For the way to make connection to the computer link module, read the manual of your computer link module.

(a) Precaution
Computer link communication made on Windows® 95 will cause a memory leak. Therefore do not perform continuous operation.

(b) Usable modules
1) Any of the following computer link modules may be used to access the PLC CPU.

	Usable Modules
C24	A1SCPUC24-R2＊1, A1SJ71C24-PRF＊2, A1SJ71C24-R2＊2, A1SJ71C24-R4＊2, A2CCPUC24＊3, A2CCPUC24-PRF＊3, AJ71C24-S6, AJ71C24-S8
UC24	AJ71UC24, A1SJ71UC24-R2, A1SJ71UC24-R4, A1SJ71UC24-PRF
QC24(N)	AJ71QC24, AJ71QC24-R2, AJ71QC24-R4, A1SJ71QC24, A1SJ71QC24-R2, AJ71QC24N, AJ71QC24N-R2, AJ71QC24N-R4, A1SJ71QC24N, A1SJ71QC24N-R2
Q series-compatible C24	QJ71C24, QJ71C24-R2

＊1: Handled as equivalent to the UC24.
＊2: Modules of software version "M" or later are handled as equivalent to the UC24.
＊3: Modules of software version "K" or later are handled as equivalent to the UC24.

2) About connection of usable modules
   When a computer link module is used to make access from the IBM-PC/AT compatible to the PLC CPU, note that three are restrictions on the modules connectable directly to the IBM-PC/AT compatible.
   If the module cannot be connected directly to the IBM-PC/AT compatible, it may be used as the "n"th module of multidropping.

Type	Interface	1:1 Connection	Multidropping	
			First module	"n"th module
A2CCPUC24	RS-232C	○	○	×
	RS-422	×	×	×
	RS-422/485	×	×	○
A2CCPUC24-PRF	RS-232C	○	○	×
	RS-422	×	×	×
	RS-422/485	×	×	○
AJ71C24-S6	RS-232C	○	○	×
	RS-422	×	×	○
AJ71C24-S8	RS-232C	○	○	×
	RS-422	×	×	○
A1SCPUC24-R2	RS-232C	○	×	×
A1SJ71C24-PRF	RS-232C	○	×	×
A1SJ71C24-R2	RS-232C	○	×	×
A1SJ71C24-R4	RS-422/485	×	×	○
AJ71UC24	RS-232C	○	○	×
	RS-422/485	×	×	○
A1SJ71UC24-R2	RS-232C	○	×	×
A1SJ71UC24-R4	RS-422/485	×	×	○
A1SJ71UC24-PRF	RS-232C	○	×	×
AJ71QC24	RS-232C	○	○	×
	RS-422/485	×	×	○
AJ71QC24-R2	RS-232C	○	×	×
	RS-232C	×	×	×
AJ71QC24-R4	RS-422	×	×	×
	RS-422/485	×	×	○
A1SJ71QC24	RS-232C	○	○	×
	RS-422/485	×	×	○
A1SJ71QC24-R2	RS-232C	○	×	×
	RS-232C	×	×	×
AJ71QC24N	RS-232C	○	○	×
	RS-422/485	×	×	○
AJ71QC24N-R2	RS-232C	○	×	×
	RS-232C	×	×	×
AJ71QC24N-R4	RS-422	×	×	×
	RS-422/485	×	×	○
A1SJ71QC24N	RS-232C	○	○	×
	RS-422/485	×	×	○
A1SJ71QC24N-R2	RS-232C	○	×	×
	RS-232C	×	×	×
QJ71C24	RS-232	○	○	×
	RS-422/485	×	×	○
QJ71C24-R2	RS-232	○	×	×
	RS-232	×	×	×

(c) Switch settings of the computer link module
     For the switch settings for use of MX Component, refer to "Section 6.1.1
     Switch settings of computer link modules".

(d) Cable for connection
     For the connection cable, refer to the manual of your computer link module.
     Refer to Appendix 3 for cable pin assignment.

POINT
Only the RS-232C connector may be used for connection of the IBM-PC/AT compatible and computer link (serial communication) module. The RS-422 connector or RS-422/485 terminal block cannot be used.

---

(2) Ethernet communication

NT	95	98	2000	Me	XP
○	○	○	○	○	○

For the way to make connection to the Ethernet module, read the manual of your
Ethernet module.

(a) Precaution
     The accessible range for Ethernet communication is the same segment only.
     Access cannot be made beyond the router and gateway.

(b) Usable modules
     Any of the following Ethernet modules may be used to access the PLC
     CPU.

	Usable Modules
E71∗1	AJ71E71, AJ71E71-S3, A1SJ71E71-B2, A1SJ71E71-B5, A1SJ71E71B2-S3, A1SJ71E71B5-S3, AJ71E71N-B2, AJ71E71N-B5T, A1SJ71E71N-B2, A1SJ71E71N-B5T
QE71∗2	AJ71QE71, AJ71QE71-B5, A1SJ71QE71-B2, A1SJ71QE71-B5, AJ71QE71N-B2, AJ71QE71N-B5T, A1SJ71QE71N-B2, A1SJ71QE71N-B5T
Q series-compatible E71	QJ71E71, QJ71E71-B2, QJ71E71-100

∗1: Accessible as equivalent to the AnACPU when fitted to the AnUCPU.
∗2: An error will occur if monitoring via QnA Ethernet and monitoring via other
     communication path are executed for the same CPU simultaneously.

(c) Switch settings of the Ethernet module
     For the switch settings for use of MX Component, refer to "Section 6.2.1
     Switch settings of Ethernet modules".

(3) CPU COM communication

NT	95	98	2000	Me	XP
○	○	○	○	○	○

(a) Precaution

CPU COM communication made on Windows® 95 will cause a memory leak. Therefore do not perform continuous operation.

(b) Cables for connection

1) Cable for connection of QCPU(Q mode) and QCPU(A mode)

The following cable is needed to make communications between the IBM-PC/AT compatible and of QCPU(Q mode) and QCPU(A mode). When communication is to be made at 115200bps or 57600bps, fast communication cannot be performed if the used IBM-PC/AT compatible does not support 115200bps or 57600bps communication speed.

If a communication error occurs, reduce the baudrate setting and restart communication.

Cable
QC30R2 (Connector of IBM-PC/AT compatible is D-sub 9-pin)
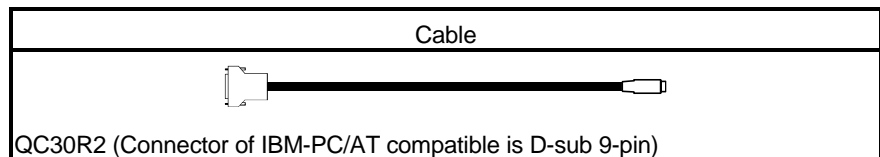
2) Cables for connection of ACPU, QnACPU or FXCPU

The following cables are needed to make communications between the IBM-PC/AT compatible and ACPU, QnACPU or FXCPU.

IBM-PC/AT Compatible Side (RS-232C Cable)	RS-232C/RS422 Converter	PLC Side (RS-422 Cable)
 F2-232CAB-1＊1 (When connector of IBM-PC/AT compatible is D-sub 9-pin)	 FX-232AW(C)	For ACPU, QnACPU or FX1/FX2/FX2cCPU FX-422CAB (0.3m/0.98feet) FX-422CAB-150 (1.5m/4.92feet) For FX0/FX0S/FX0N/FX1N//FX1NC/FX1S/FX2N/FX2NCCPU FX-422CAB0 (1.5m/4.92feet)

＊1: How to identify compatible product of F2-232CAB-1 cable
Check the indication on the type label attached to the cable.

Incompatible product   Indicates as a compatible product (with indication of F/FX/A)

F2-232CAB-1 Y990C ＊＊＊＊＊	→	F2-232CAB-1(F/FX/A) Y990C ＊＊＊＊＊
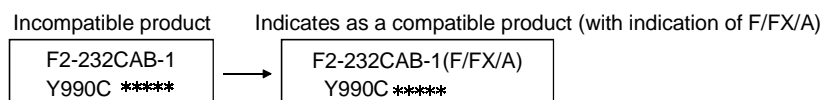
POINT

For connection with the FX series, always use the device indicated in the above table.

---

3) Cables for connection of motion controller CPU

For communications between the IBM-PC/AT compatible and motion controller CPU, use the cables as indicated in 2).

(4) CPU USB communication

NT	95	98	2000	Me	XP
×	×	○	○	○	○

CPU USB communication may be made only when the Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU or Q25PHCPU is used.

(a) About the USB cable (QCPU (Q mode) compatible)

1) Windows® 98, Windows® 2000 Professional, Windows® Me, Windows® XP Professional or Windows® XP Home Edition may be used when the USB driver has been installed.

2) When using Windows® 2000 Professional, Windows® XP Professional or Windows® XP Home Edition, the user must install the USB driver.

3) When the USB cable is used, only one PLC CPU may be connected.

4) Use the USB cable which conforms to the USB Standard Rev. 1.1.

5) Refer to "Operating Instructions" for the precautions for and restrictions on use of the USB cable to make communications.

(5) MELSECNET/10 communication

NT	95	98	2000	Me	XP
○	○	○	×	×	×

(a) Precautions

1) Always use any of the following communication drivers.
Other communication drivers cannot be used.

Used OS	SW2DNF-MNET10	SW3DNF-MNET10
Windows NT® Workstation 4.0	○	○
Windows® 95	○	○
Windows® 98	○	○
Windows® 2000 Professional	×	×
Windows® Me	×	×
Windows® XP Professional	×	×
Windows® XP Home Edition	×	×

○ : Usable, × : Unusable

2) The following are the CPUs that can be accessed by the communication drivers.

CPU Type	SW2DNF-MNET10	SW3DNF-MNET10
ACPU (Including motion controller CPU)	○	○
QCPU(A mode)	○	○
QnACPU	○	○
QCPU(Q mode)	×	○

○ : Accessible, × : Inaccessible

(6) MELSECNET/H communication

NT	95	98	2000	Me	XP
○	○	○	○	×	×

(a) Precautions
As the communication driver, always use SW0DNC-MNETH-B or later.
Any other communication driver is unusable.

(7) CC-Link communication

NT	95	98	2000	Me	XP
○	○	○	○	×	×

(a) Precautions

1) Always use any of the following communication drivers.
Other communication drivers cannot be used.

Used OS	SW2DNF-CCLINK	SW3DNF-CCLINK	SW4DNF-CCLINK-B
Windows NT® Workstation 4.0	○	○	○
Windows® 95	○	○	○
Windows® 98	○	○	○
Windows® 2000 Professional	×	×	○
Windows® Me	×	×	×
Windows® XP Professional	×	×	×
Windows® XP Home Edition	×	×	×

○ : Usable, × : Unusable

2) The following are the CPUs that can be accessed by the communication drivers.

CPU Type	SW2DNF-CCLINK		SW3DNF- CCLINK		SW4DNF-CCLINK-B	
	A to V ＊1	W to ＊2	A to V ＊1	W to ＊2	A to V ＊1	W to ＊2
ACPU (including motion controller CPU)	○	○	○	○	○	○
QCPU(A mode)	○	○	○	○	○	○
QnACPU	○	○	○	○	○	○
QCPU(Q mode)	×	×	×	○	×	○

○ : Accessible, × : Inaccessible
＊1 For ROM versions "A" to "V" of CC-Link board
＊2 For ROM versions "W" and later of CC-Link board

3) The CC-Link master station module used should be of software version "N" or later.

(8) CC-Link G4 communication

NT	95	98	2000	Me	XP
◯	◯	◯	◯	◯	◯

(a) Precautions

1) Computer link communication made on Windows® 95 will cause a memory leak. Therefore do not perform continuous operation.

2) The CC-Link G4 module used should be of software version "D" or later.

3) The CC-Link master station module used should be of software version "N" or later.

(b) Switch settings of the CC-Link G4 module

For the switch settings for use of MX Component, refer to "Section 6.7.1 Switch settings of CC-Link G4 module".

(c) About cables

Communications between the IBM-PC/AT compatible and CC-Link G4 module require the RS-232C/RS-422 conversion cables as used in CPU COM communication.

For more information, refer to "(3) 2) Cables for connection of ACPU, QnACPU or FXCPU".

(9) CPU board communication

NT	95	98	2000	Me	XP
◯	×	×	◯	×	×

(a) Precautions

1) Always use any of the following communication drivers. Other communication drivers cannot be used.

Used OS	SW0DNF-ANU-B	SW1DNF-ANU-B
Windows NT® Workstation 4.0	◯	◯
Windows® 95	×	×
Windows® 98	×	×
Windows® 2000 Professional	×	◯
Windows® Me	×	×
Windows® XP Professional	×	×
Windows® XP Home Edition	×	×

◯ : Usable, × : Unusable

2) Access to the QCPU (Q mode) and FXCPU cannot be made.

(10) Q series bus communication (only when PC CPU module is used)

NT	95	98	2000	Me	XP
○	×	×	○	×	×

(a) Precautions

1) Use the MELSECNET/H communication and CC-Link communication controls to make access to other stations via the MELSECNET/H module and CC-Link module controlled by the PC CPU module.

(11) GX Simulator communication

NT	95	98	2000	Me	XP
○	○	○	○	○	×

When making GX Simulator communication, use GX Developer and GX Simulator of the following versions or later.

Used OS	GX Developer	GX Simulator
Windows NT® Workstation 4.0	Version 5 (SW5D5C-GPPW-E) or later	SW5D5C-LLT-E (10B or later)
Windows® 95		
Windows® 98		
Windows® 2000 Professional	Version 7 (SW7D5C-GPPW-E) or later	SW6D5C-LLT-E or later
Windows® Me		
Windows® XP Professional	×	×
Windows® XP Home Edition		

POINT
GX Developer and GX Simulator must be purchased separately.

(12) Modem communication

NT	95	98	2000	Me	XP
○	○	○	○	○	○

(a) Precautions

1) When performing modem communication, make the setting in the parameters and sequence program for the connected module.
Use any of the following GX Developers to set the corresponding module.

Module	GX Developer
A6TEL, Q6TEL, FXCPU, QC24N	Version 3 (SW3D5C-GPPW-E/ SW3D5F-GPPW-E) or later
Q series-compatible C24	Version 4 (SW4D5C-GPPW-E) or later

2) For modem communication using the FXCPU, only the FX1S, FX1N, FX1NC, FX2N and FX2NC are applicable.

3) Use the RS-232C cable supplied with the modem for connection between the personal computer and modem.

(b) Modem specifications

When performing modem communication, select the modem that satisfies the following specifications.

1) AT command compatibility (initialization command)

2) Only the DR terminal can be turned ON (High) independently.
(Example: The modem where the CD terminal turns ON when only the DR terminal is turned ON is not applicable.)

3) Communication Standards: ITU-T   V.90/V.34/V.32bis/V.32/V.22BIS/
                                                    V.22/V.21/V.FC
                                        Bell   212A/103

POINT

(1) MX Component is not compatible with manual line connection (connection via an operator).
Use a subscriber telephone line or private telephone line to perform modem communication.

(2) It is required to set the COM port when performing modem communication by using modem built in the personal computer or the PC card (PCMCIA).
For the COM port of the modem built in the personal computer or the PC card (PCMCIA), refer to the manual of the corresponding product.

(3) For modem communication, the AT command, that is standard for some modems, is not executable.
If the line cannot be connected by selecting "Modem standard" for "AT command" within the communication settings utility, specify the AT command on the user side.
Refer to Section 5.1.7 for the setting of "AT command" within the communication settings utility.

(4) When using the callback function, use the Q Series Corresponding C24.

---

(13) Gateway function communication

NT	95	98	2000	Me	XP
○	○	○	○	○	○

(a) Gateway function-compatible GOT
For the gateway function-compatible GOT, refer to the Operating Manual (Gateway Functions) of the GOT.

(b) About GOT setting and setting between GOT and PLC
For the GOT setting and the setting between the GOT and PLC, refer to the Operating Manual (Gateway Functions) of the GOT.

2.3 Operating Environment

The following table summarizes the operating environment for MX Component.

Item		Description
Personal computer	IBM PC/AT compatible personal computer	133MHz or more Pentium® *1 IBM PC/AT compatible personal computer where the OS operates. *2
	PC CPU module	MELSEC-Q series compatible PC CPU module (CONTEC CO., LTD. make)
O S		Any of Microsoft® Windows® 2000 Professional Operating System (English version), Microsoft® Windows® Millennium Edition Operating System (English version), Microsoft® Windows® 95 Operating System (English version), Microsoft® Windows® 98 Operating System (English version), Microsoft® Windows NT® Workstation Operating System Version 4.0 (English version) *3, Microsoft® Windows® XP Professional Operating System (English version) *4 and Microsoft® Windows® XP Home Edition (English version) *4
Required memory		32MB or more *5
Hard disk free space		100MB or more
Disk drive		CD-ROM disk drive
Display		800 × 600 dot or more resolution
Programming language *6		(see sub-table below)

Programming language	Development software
Visual Basic®	Microsoft® Visual Basic® 6.0 (English version)
Visual C++®	Microsoft® Visual C++® 6.0 (English version)
VBScript *7, *8	Text editor and commercially available HTML tool
VBA	Microsoft® Excel 2000 (English version), Microsoft® Excel 2002 (English version), Microsoft® Access 2000 (English version) or Microsoft® Access 2002 (English version)

*1: Pentium® 150MHz or more is recommended for use of Windows® Me, or Pentium® 300MHz or more for use of Windows® XP Professional or Windows® XP Home Edition.
*2: A multiprocessor IBM-PC/AT compatible personal computer cannot be used because of driver incompatibility.
*3: Service Pack 3 or more is needed for use of Windows NT® Workstation 4.0.
*4: MX Component cannot be used in the XP compatibility mode.
*5: 64MB or more is recommended for use of Windows® 2000 Professional, or 128MB or more for use of Windows® XP Professional or Windows® XP Home Edition.
*6: User programs created in the English environment may be used in the English environment only. They cannot be used in the Japanese environment.
*7: To operate VBScript, use Internet Explorer (version 5.00.2919.6307 or later).
*8: When Windows® Me or Windows® XP Home Edition is used, the ASP function is unusable.

2.4 Usable PLC CPUs

The usable PLC CPUs are given below.

	PLC CPU Types
ACPU	A0J2HCPU, A1SCPU, A1SCPU-S1, A1SCPUC24-R2, A1SHCPU, A1SJCPU, A1SJHCPU, A1NCPU, A2CCPU, A2CCPUC24, A2CCPUC24-PRF, A2CJCPU, A2NCPU, A2NCPU-S1, A2SCPU, A2SCPU-S1, A2SHCPU, A2SHCPU-S1, A3NCPU, A1FXCPU, A2ACPU, A2ACPU-S1, A2ACPUP21/R21, A2ACPUP21/R21-S1, A3ACPU, A3ACPUP21/R21, A2UCPU, A2UCPU-S1, A2USCPU, A2USCPU-S1,A2ASCPU, A2ASCPU-S1, A2ASCPU-S30, A2USHCPU-S1, A3UCPU, A4UCPU
QnACPU	Q2ACPU, Q2ACPU-S1, Q2ASCPU, Q2ASCPU-S1, Q2ASHCPU, Q2ASHCPU-S1, Q3ACPU, Q4ACPU, Q4ARCPU
QCPU (A mode)	Q02CPU-A, Q02HCPU-A, Q06HCPU-A
QCPU (Q mode)	Q00JCPU, Q00CPU, Q01CPU, Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU, Q25PHCPU
FXCPU	FX0, FX0S, FX0N, FX1, FX1N, FX1NC, FX1S, FX2, FX2C, FX2N, FX2NC series
Motion controller CPU	A171SHCPU, A172SHCPU, A173UHCPU, A173UHCPU-S1, A273UHCPU, A273UHCPU-S3

3 OPERATION PROCEDURES

This chapter explains the selection of the MX Component development type and the procedures for creating user applications.

3.1 Selecting the Development Type

When using MX Component to create user applications, choose the utility setting type or program setting type before creating a user application.
The utility setting type and program setting type will be described.

(1) Utility setting type

Make communication settings using the communication setting wizard.
Using the communication setup utility enables you to create a user program without being aware of the complicated parameters of any communication.
In the user program, the communication line can be connected by simply setting the logical station number set on the communication setting wizard to the ACT control property or into a user program.

(2) Program setting type

A user program is created without using the communication setup utility.
Make ACT control settings for the corresponding communication in the property window directly or within the user program.
The properties necessary to be set depend on the ACT control.

(3) Comparison

The following table compares the utility setting type and program setting type.

Setting Type \ Item	Utility Setting Type	Program Setting Type
Feature	Communication settings can be made easily using the communication setting wizard. In program creation, communication can be made by merely making the setting (logical station number) on the communication setting wizard. (The number of development processes can be reduced.)	All communication settings can be made in the user program. Communication settings can be changed flexibly in the user program.
Used ACT control	ActEasyIF, ActMLEasyIF	ACT control for corresponding communication
Whether communication setup utility is used or not	Used.	Not used.
How to connect PLC monitor utility	Choose the logical station number.	Change the settings every time you make connection. (Use the wizard)

3.2 User Application Creating Procedures

3.2.1 When using Microsoft® Visual Basic®

The following creation procedures assumes use of Visual Basic® .

```
┌──────────────────────────────────────────┐
│ Power on the IBM-PC/AT compatible and start │
│ Windows.®                                    │
└──────────────────────────────────────────┘
                    │
                    ▼
┌──────────────────────────┐
│   Install MX Component.   │·····Refer to the operating manual (startup).
└──────────────────────────┘
                    │
                    ▼
              Make settings using the        No
              utility setting type?  ─────────────────────────┐
                    │                                          │
                   Yes                                         │
                    ▼                                          ▼
┌─────────────────────────────────────┐   ┌──────────────────────────────────────┐
│ <Utility setting type>              │   │ <Program setting type>               │
│ ┌─────────────────────────────────┐ │   │   ┌────────────────────────────┐    │
│ │Start the communication setup    │·│···│   │   Start Visual Basic®.      │    │
│ │utility and make communication   │ │ Refer to │ └────────────────────────────┘    │
│ │settings in accordance with the  │ │ Section 5.1,         │                    │
│ │wizard.                          │ │ Chapter 6. ┌────────────────────────────┐ │ Refer to the
│ └─────────────────────────────────┘ │   │   │   Add the ACT controls to  │ │ programming
│            │                        │   │   │   Visual Basic® .           │ │ manual.
│            ▼                        │   │   └────────────────────────────┘ │
│ ┌─────────────────────────────────┐ │   │                │                   │
│ │   Start Visual Basic®.          │ │   │                ▼                   │
│ └─────────────────────────────────┘ │   │   ┌────────────────────────────┐ │
│            │              Refer to  │   │   │ Create a form and paste the│ │
│            ▼              the        │   │   │ ACT controls for           │ │
│ ┌─────────────────────────────────┐ │ programming │ corresponding             │ │
│ │   Register the ACT control to   │ │ manual. │ communication.             │ │
│ │   Visual Basic® .               │ │   │   └────────────────────────────┘ │
│ └─────────────────────────────────┘ │   │                │                   │
│            │                        │   │                ▼                   │
│            ▼                        │   │   ┌────────────────────────────┐·····Refer to the
│ ┌─────────────────────────────────┐ │   │   │ Set the properties of the  │ programming
│ │ Create a form and paste the     │ │   │   │ pasted ACT controls.       │ manual and
│ │ control. (ActEasyIF control)    │ │   │   └────────────────────────────┘ Chapter 7.
│ └─────────────────────────────────┘ │   └──────────────────────────────────────┘
│            │                        │
│            ▼                        │
│ ┌─────────────────────────────────┐·····Refer to
│ │ Set the property of the pasted  │ Chapter 6.
│ │ control. (Set only the logical  │
│ │ station number)                 │
│ └─────────────────────────────────┘
└─────────────────────────────────────┘
                    │
                    ▼
┌──────────────────────────────────────────┐
│ Perform programming using the functions    │·····Refer to the programming manual.
│ offered by the corresponding ACT control.  │
└──────────────────────────────────────────┘
                    │
                    ▼
              Perform debugging           Yes
              using the PLC monitor ─────────────┐
              utility?                            │
                    │                             ▼
                   No            ┌──────────────────────────────────────────┐
                    │            │ Refer to "Section 3.3 PLC Monitor Utility  │
                    │            │ Operating Procedure".                      │
                    │            └──────────────────────────────────────────┘
                    │                             │
                    ▼◄────────────────────────────┘
┌──────────────────────────────────────────┐
│      Completion of user application        │
└──────────────────────────────────────────┘
```

3.2.2 When using Microsoft® Visual C++®

The following creation procedures assumes use of Visual C++®.

Power on the IBM-PC/AT compatible and start Windows®.

Install MX Component. ·····Refer to the operating manual (startup).

Make settings using the utility setting type? ──No──

Yes

<Utility setting type>

Start the communication setup utility and make communication settings in accordance with the wizard. ·····Refer to Section 5.1, Chapter 6.

Start Visual C++®.

Register the ACT control to Visual C++®.

Create a form and paste the control. (ActEasyIF control)

Using ClassWizard, define the pasted ACT control as a dialog member.

Refer to the programming manual.

Set the property of the pasted control. (Set only the logical station number) ·····Refer to Chapter 6.

<Program setting type>

Start Visual C++®.

Add the ACT control to Visual C++®.

Create a form and paste the ACT control for corresponding communication.

Using Class Wizard, define the pasted ACT control as a dialog member.

Set the properties of the pasted ACT control.

Refer to the programming manual.

Perform programming using the functions offered by the corresponding ACT control. ·····Refer to the programming manual.

Perform debugging using the PLC monitor utility? ──Yes──

Refer to "Section 3.3 PLC Monitor Utility Operating Procedure".

No

Completion of user application

3.2.3 When using VBA

The following creation procedures assumes use of VBA.

```
┌────────────────────────────────────────────────┐
│ Power on the IBM-PC/AT compatible and start    │
│ Windows®.                                       │
└────────────────────────────────────────────────┘
                      │
┌────────────────────────────────────────────────┐
│          Install MX Component.                  │ ·····Refer to the operating manual (startup).
└────────────────────────────────────────────────┘
                      │
             ◇ Make settings using ◇ ──No──┐
               the utility setting type?    │
                      │ Yes                  │
```

<Utility setting type>

Start the communication setup utility and make communication settings in accordance with the wizard. ·····Refer to Section 5.1, Chapter 6.

Start Microsoft® Excel orMicrosoft® Access.

Start Visual Basic Editor and create applications.

Generate the ActEasyIF control so that MX Component may be utilized on VBA.

Refer to the programming manual.

Set the property of the pasted control. (Set only the logical station number) ·····Refer to Chapter 6.

<Program setting type>

Start Microsoft® Excel orMicrosoft® Access.

Start Visual Basic Editor and create applications.

Generate the corresponding communication control so that MX Component may be utilized on VBA.

Refer to the programming manual.

Set the property of the pasted control. ·····Refer to Chapter 6.

Perform programming using the functions offered by the corresponding ACT control. ·····Refer to the programming manual.

◇ Perform debugging using the PLC monitor utility? ◇ ──Yes──→ Refer to "Section 3.3 PLC Monitor Utility Operating Procedure".

│ No

Completion of user application

3.2.4 When using VBScript

The following creation procedures assumes use of VBScript.

Power on the IBM-PC/AT compatible and start Windows®.

Install MX Component. ····· Refer to the operating manual (startup).

Make settings using the utility setting type? ── No

Yes

<Utility setting type>

Start the communication setup utility and make communication settings in accordance with the wizard. ····· Refer to Section 5.1, Chapter 6.

Create a home page using the text editor and HTML editor.

On the home page, generate the ActMLEasyIF control so that MX Component may be utilized using VBScript. ── Refer to the programming manual.

Set the property of the pasted control. (Set only the logical station number) ····· Refer to Chapter 6.

<Program setting type>

Create a home page using the text editor and HTML editor.

On the home page, generate the ActMLEasyIF control so that MX Component may be utilized using VBScript. ── Refer to the programming manual.

Set the property of the pasted control. ····· Refer to Chapter 6.

Perform programming using the functions offered by the corresponding ACT control. ····· Refer to the programming manual.

Perform debugging using the PLC monitor utility? ── Yes

No

Refer to "Section 3.3 PLC Monitor Utility Operating Procedure".

Completion of user application

POINT	
Refer to Appendix 2 for the way to start the Internet/intranet environment.	

3.3 PLC Monitor Utility Operating Procedure

The following is the PLC monitor utility operating procedure.

```
                    ┌─────────────────────┐
                    │        Start        │
                    └─────────────────────┘
                              │
                    ┌─────────────────┐
                    │ Use utility     │    No
                    │ setting type?   │──────────────────────────────┐
                    └─────────────────┘                              │
                         │ Yes                                       │
   ┌─────────────────────────────────────┐   ┌──────────────────────────────────────────────────┐
   │      <Utility setting type>         │   │            <Program setting type>                │
   │ ┌─────────────────────────────────┐ │   │ ┌──────────────────────────────────┐            │
   │ │ Start the communication setup   │ Refer to│ │ Start the PLC monitor utility.  │           │
   │ │ utility and make communication  │ Section 5.1,│└──────────────────────────────┘            │
   │ │ settings in accordance with the │ Chapter 6. │        │                                    │
   │ │ wizard.                         │ │   │ ┌──────────────────────────────────┐            │
   │ └─────────────────────────────────┘ │   │ │ After the transfer setting       │  Refer to   │
   │ ┌─────────────────────────────────┐ │   │ │ screen has appeared, choose the  │ Section 4.1, Section 5.2. │
   │ │ Start PLC monitor utility.      │ │   │ │ program setting type.            │            │
   │ └─────────────────────────────────┘ │   │ └──────────────────────────────────┘            │
   │ ┌─────────────────────────────────┐ Refer to│        │                                    │
   │ │ After the transfer setting      │ Section 4.1,│ ┌──────────────────────────────────┐      │
   │ │ screen has appeared, choose the │ Section 5.2.│ │ Press the wizard button on the   │      │
   │ │ utility setting type.           │ │   │ │ transfer setting screen and make │      │
   │ └─────────────────────────────────┘ │   │ │ target setting.                  │      │
   │ ┌─────────────────────────────────┐ │   │ └──────────────────────────────────┘      │
   │ │ Choose the logical station      │ │   │        │                                    │
   │ │ number set on the communication │ │   │ ┌──────────────┐  No ┌─────────────────────┐ │
   │ │ setup utility.                  │ │   │ │ Is connection│────▶│ Click the image     │ Refer to│
   │ └─────────────────────────────────┘ │   │ │ destination  │     │ diagram of the      │ Section 5.2, Chapter 7.│
   └─────────────────────────────────────┘   │ │ correct?     │     │ location you want to │ │
                         │                    │ └──────────────┘     │ correct, and make    │ │
                         │                    │        │ Yes         │ setting again.       │ │
                         │                    │        └─────────────└─────────────────────┘ │
                         │                    └──────────────────────────────────────────────────┘
                         │◀───────────────────────────────┘
   ┌─────────────────────────────────┐
   │ Select the monitor you want to  │ Refer to Section 5.2
   │ execute from among three tabs    │
   │ according to your application.   │
   └─────────────────────────────────┘
                         │
   ┌─────────────────────────────────┐
   │ Press the monitor start button. │
   └─────────────────────────────────┘
                         │
              ┌─────────────────────┐
              │  Monitor execution  │
              └─────────────────────┘
```

4 OPERATIONS COMMON TO UTILITIES

This chapter explains the operations common to the utilities.

4.1 Starting the Utility

Each utility can be started by clicking the corresponding icon in the [Start]-[Programs ＊1]-[MELSOFT Application]-[MX Component] menu.
For the registered icons, refer to the operating manual (startup).

＊1: [All programs] appears when using Microsoft® Windows® XP Professional
Operating System or Microsoft® Windows® XP Home Edition Operating System.

Communication Setup Utility ← Starts Communication Setup Utility.
PLC Monitor Utility ← Starts PLC Monitor Utility.
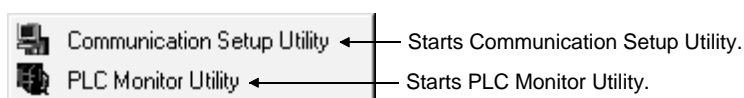
4.2 Exiting the Utility

To exit each utility, click the Exit button at bottom right of the screen.
As the dialog box appears, click the Yes button to exit the utility.
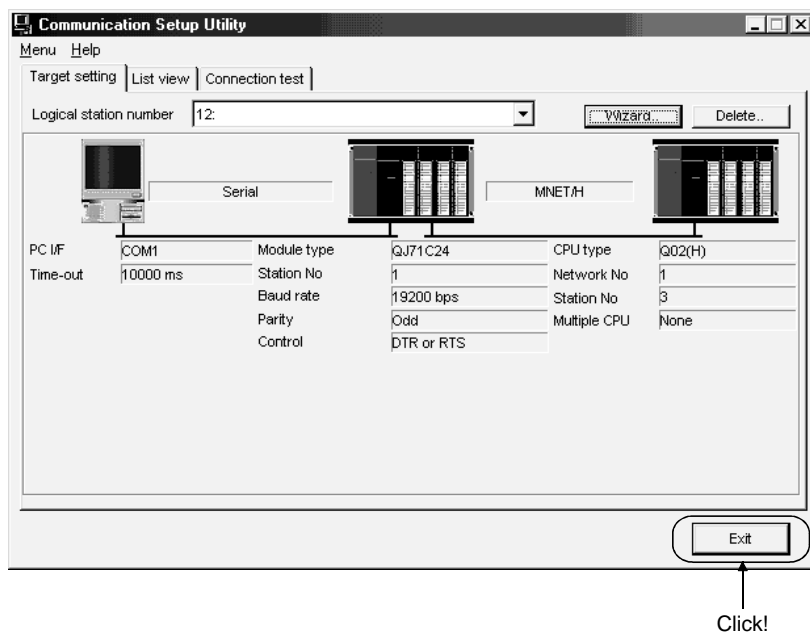
Click!

4.3 Confirming the Version

To confirm the version of each utility, click the [Help]-[About] menu.

Click!

4

5 UTILITY OPERATIONS

This chapter provides how to operate the communication setup utility and PLC monitor utility.

> **POINT**
>
> Refer to "CHAPTER 6 COMMUNICATION SETTING EXAMPLES OF THE UTILITY SETTING TYPE" for communication setting examples using the communication setup utility.

5.1 Communication Setup Utility

This section describes how to operate and set the communication setup utility used to make communication with the utility setting type.

5.1.1 Operations on target setting screen

This screen is used to display the setting details of the logical station number set on the communication setting wizard and to edit the logical station number.
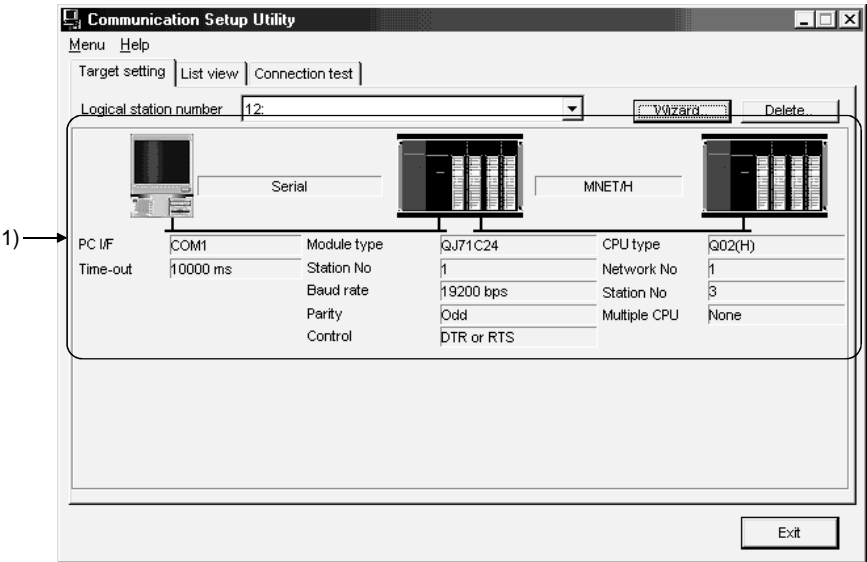
Item	Description
Logical station number	Choosing the logical station number set on the communication setting wizard shows 1) (Connection image diagram).
Wizard	Used to start the communication setting wizard and set the logical station number.
Delete	Used to delete the preset logical station number.
1) (Connection image diagram)	Shows the connection image diagram of the logical station number set on the communication setting wizard. Clicking any sketch (personal computer, PLC CPU) in the connection image diagram starts the communication setting wizard, enabling you to change the settings.

REMARK

For details of the communication setting wizard, refer to "Section 5.1.6 Operations on the communication setting wizard screen".

5.1.2 Operations on list view screen

This screen is used to list the logical station numbers registered, edit the logical station number, and list the properties necessary for the program setting type.
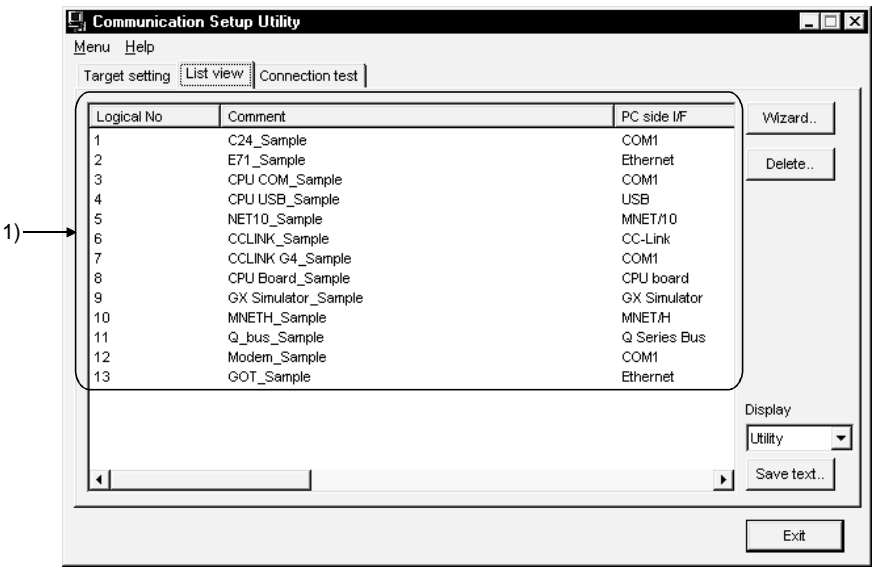
Item	Description
1) (Property list)	Shows the settings of the registered logical station numbers. Double-clicking the logical station number starts the communication setting wizard.
Wizard	Used to start the communication setting wizard and set the logical station number.
Delete	Used to delete the preset logical station number.
Display	Utility ....Shows the settings made for the logical station numbers in 1) (Property list). Program.....Shows the property list necessary for setting with the program setting type in 1) (Property list).
Save text	1) Used to save the settings of 1) (Property file) into a file in the txt format.

REMARK

For details of the communication setting wizard, refer to "Section 5.1.6 Operations on the communication setting wizard screen".

5.1.3 Operations on connection test screen

This screen is used to conduct a communication test on the logical station number registered.

Item	Description
Logical station number	Choose the logical station number on which a communication test will be made.
Communication diagnosis count	Set how many times the communication test will be repeated for the specified logical station number. (Default: 5) Setting range: 1 to 32767
Test (Cancel)	Used to start (stop) the communication test. When the logical station number where the modem communication data have been set is selected, the following screen appears after Test is clicked. When you have set the password, enter the password and click OK .
Result	Shows the result of the communication test.<table><tr><td>Item</td><td>Description</td></tr><tr><td>Diagnosis count</td><td>Shows the number of connections made during the communication test.</td></tr><tr><td>Result</td><td>Shows the test result. An error code appears at error occurrence. 0 appears at normal termination, or any value other than 0 appears at abnormal termination.</td></tr><tr><td>CPU name</td><td>Shows the connected CPU type.</td></tr><tr><td>Mean time of communication</td><td>Shows the average time taken until one communication test is established. (Unit: ms)</td></tr></table>

5.1.4 Operations on com setup import screen

The communication settings saved in the file by the operations in Section 5.1.5 are reflected on the utility.

This screen is used when the communication settings made on the other IBM-PC/AT compatible are to be reflected on the IBM-PC/AT compatible being used.

(1)   Selected menu item

Choose the [Menu]-[COM setup import] on the menu bar.
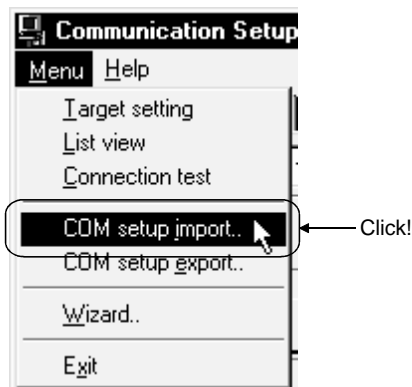
(2) Dialog box
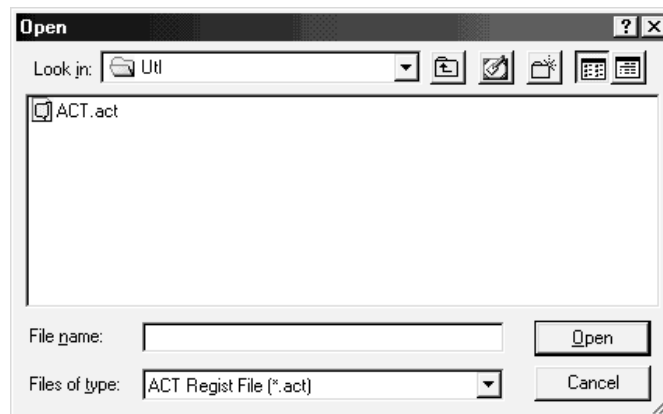
Item	Description
Look in	Specify the place where the file to be imported exists.
File name	Enter the file name to be imported.
Files of type	Set the type of the file to be imported.
Open	Used to execute import.
Cancel	Used to cancel importing the communication settings.

5.1.5 Operations on com setup export screen

The communication settings being made on the IBM-PC/AT compatible are saved in a file. (The file where data are saved is called the ACT registered file.)
This screen is used to reflect the communication settings on the other IBM-PC/AT compatible.

POINT
Uninstalling deletes all the settings within "Communication Setup Utility". To avoid this, export the file storing the settings.

(1)   Selected menu item

Choose the [Menu]-[COM setup export] on the menu bar.
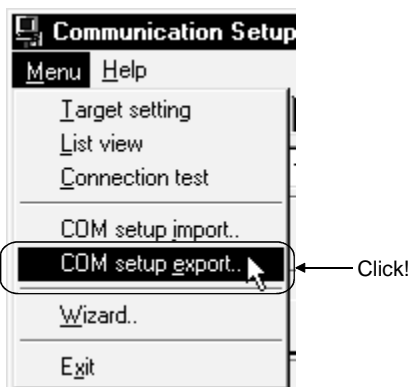
(2) Dialog box
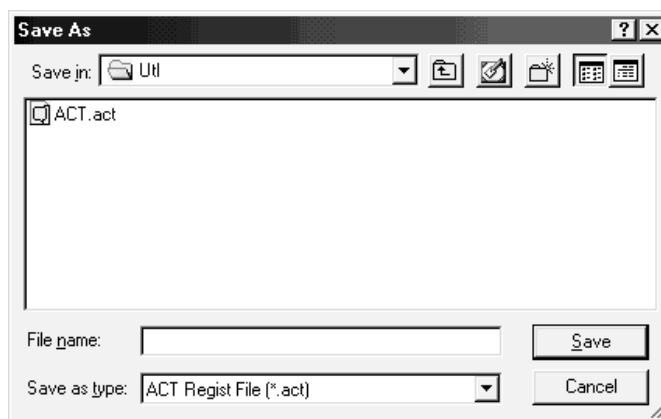
Item	Description
Save in	Specify the place where the file will be exported.
File name	Enter the file name to be saved.
Save as type	Set the type of the file to be saved.
Save	Used to export the communication settings.
Cancel	Used to cancel exporting the communication settings.

5.1.6 Operations on communication setting wizard screens

These screens are used to set the logical station number necessary to make communication with the utility setting type.

(1)   Outline of the communication setting wizard
The logical station number necessary to make communication with the utility setting type is set in the wizard format.
The places and descriptions of the settings made on the communication setting wizard screens will be given below.
For the wizard screen settings, refer to "(3) Explanation of the communication setting wizard screens".
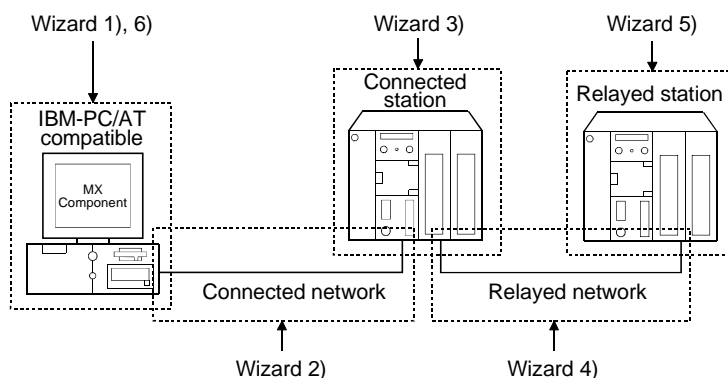
Screen Name	Description
Wizard 1)	Used to set the logical station number.
Wizard 2)	Used to set the connected network between the IBM-PC/AT compatible and connected station (PLC CPU and module).
Wizard 3)	Used to set the connected station (PLC CPU and module).
Wizard 4)	Used to set the relayed network between the connected station (PLC CPU and module) and relayed station (PLC CPU and module).
Wizard 5)	Used to set the relayed station PLC CPU.
Wizard 6)	Used to comment the logical station number.

(2)   Starting procedure
Choose the [Menu]-[Wizard] on the menu bar.
(You can also start by clicking the $\boxed{\text{Wizard}}$ button displayed on the utility screen.)
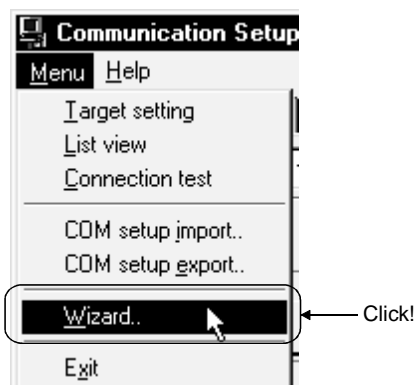
(3) Explanation of the communication setting wizard screens
Communication setting wizard screens are shown from wizard 1) to wizard 6) in the order.
The following explains the communication setting wizard screens in the displayed order.

POINT
(1) The displays or available setting items of the communication setting wizard screens change with the communication settings. Set all available setting items being displayed.
(2) Some of the communication setting wizard screens may not appear depending on the settings.
(3) If the communication setting wizard is repeatedly started, a memory shortage error may occur. This problem occurs due to MS-IME95 or MS-IME97 of Microsoft Corporation. If the memory shortage error has occurred, change MS-IME95 or MS-IME97 for MS-IME2000.

Start the communication setting wizard.

↓

Wizard 1)
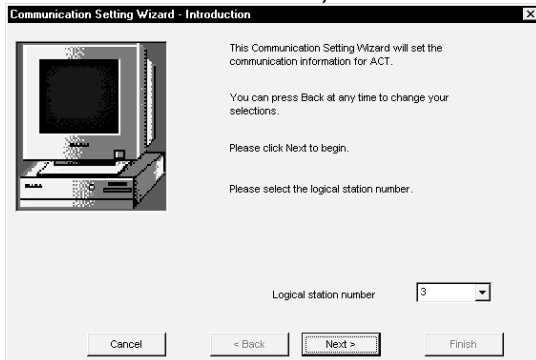
1) Type or choose the logical station number and click the Next> button.

The logical station number can be registered between 0 and 1023.

↓

(To the next page)

(From the preceding page)
↓

Wizard 2)
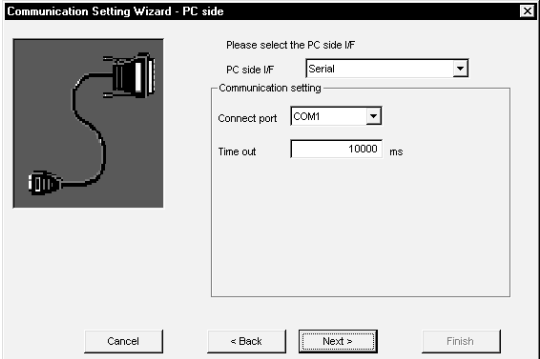
2) Choose the "PC side I/F" to communicate with.
The items shown in "Communication setting" change with
the setting made in "PC side I/F".

Set all available setting items and click the | Next> | button.

The choices corresponding to the communications in "PC
side I/F" are indicated below.

Setting Item	Communication Name
Serial	Computer link communication, CPU COM communication, CC-Link G4 communication
USB	USB communication
MELSECNET/10 board	MELSECNET/10 communication
MELSECNET/H board	MELSECNET/H communication
Q Series Bus	Q Series bus communication
CC-Link board	CC-Link communication
Ethernet board	Ethernet communication, Gateway function communication
CPU board	CPU board communication
GX Simulator	GX Simulator communication
Modem	Modem communication

↓

Wizard 3)
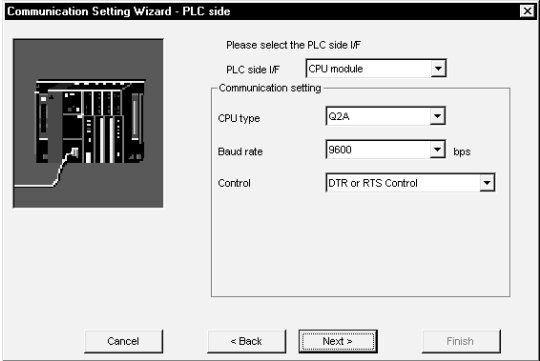
3) Wizard 3) differs in available setting items depending on
the settings on Wizard 2).

Set all available setting items and click the | Next> | button.

↓

Wizard 4)
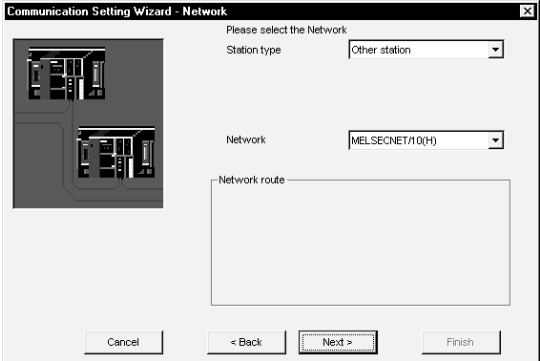
4) Wizard 4) differs in available setting items depending on
the settings on Wizard 2) and Wizard 3).

Set all available setting items and click the | Next> | button.

REMARK

When the modem is selected on Wizard 2), the line setting
screen appears on Wizard 3) and Wizard 4).
For details of the line setting screen, refer to "Section 5.1.7
Operations on line setting screen".

↓

(To the next page)

(From the preceding page)

↓

Wizard 5)
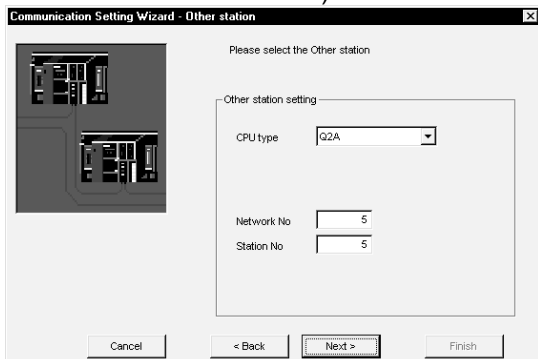
5) Wizard 5) differs in available setting items depending on the settings on Wizard 2), Wizard 3) and Wizard 4).
Set all available setting items and click the $\boxed{\text{Next>}}$ button.

↓

Wizard 6)
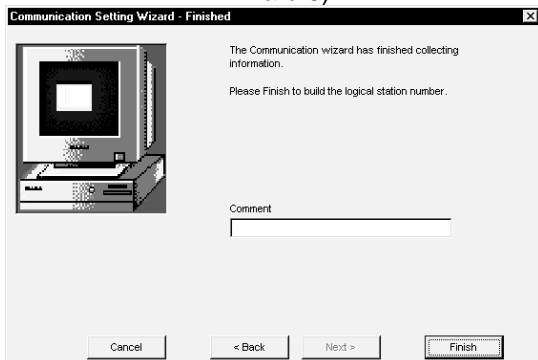
6) Comment the logical station number that was set.
A comment may be entered using up to 32 characters.
Enter a comment and click the $\boxed{\text{Finish}}$ button.

When you do not need a comment, click the $\boxed{\text{Finish}}$ button without entering it.

↓

(Registration complete)

When the registration of the logical station number is completed on the communication setting wizard, the settings are displayed on the target setting screen.

<Before registration>   <After registration>
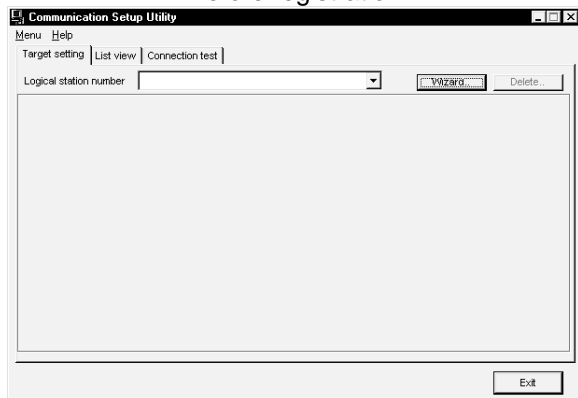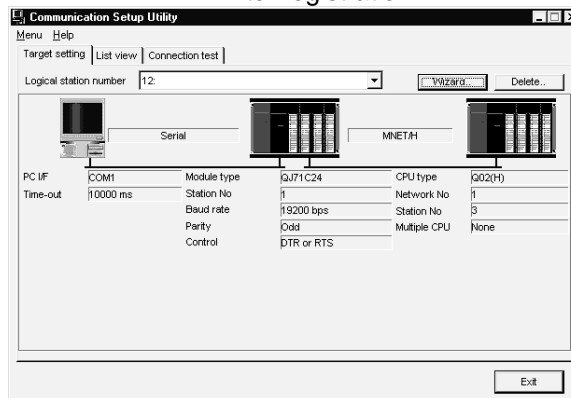
5.1.7 Operations on line setting screen

This screen is used to make the telephone line settings necessary to set modem communication in the communication settings utility.

(1) Line setting screen
Set the line connection system, telephone line, AT command, etc.

Item	Description
Connect way	Set the line connection system. When the Q Series Corresponding C24 is used, any of the following items can be selected. (Fixed to "Auto line connect" when the A6TEL, Q6TEL, FXCPU or QC24N is used.) <table><tr><th>Item</th><th>Description</th></tr><tr><td>Auto line connect</td><td>Select this item when the callback function has not been set.</td></tr><tr><td>Auto line connect (Callback fixation)</td><td rowspan="8">For details on the connection format of each callback function, refer to the Programming Manual.</td></tr><tr><td>Auto line connect (Callback number specification)</td></tr><tr><td>Callback connect (Fixation)</td></tr><tr><td>Callback connect (Number specification)</td></tr><tr><td>Callback request (Fixation)</td></tr><tr><td>Callback request (Number specification)</td></tr><tr><td>Callback reception waiting</td></tr></table>
Callback number	Set the telephone number used with the callback function of the Q Series Corresponding C24. This item can be set only when "Auto line connect (Callback number specification)", "Callback connect (Number specification)" or "Callback connect (Number specification)" is selected in the line connection system. Setting range: 62 characters Setting characters: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, -, ∗, #

Item		Description
Line	Line type	Set the line type. (Default: Tone) | Item | Description | | Pulse | Choose this item when using rotary dialing line. | | Tone | Choose this item when using push button dialing line. | | ISDN | Choose this item when using ISDN line. |
	Outside line number	Set the outside line access number. Setting range: 10 characters Setting characters: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, -, ∗, #
	Port	Set the COM port for modem communication. (Default: COM1)
Connection target	Call number	Enter the telephone number of the connection target. When the connection target has been selected on the phone book screen, the telephone number of the connection target appears. Setting range: 50 characters Setting characters: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, -, ∗, #
	Name	The other end name of the connection target selected on the phone book screen appears.
	Browse	Used to display the phone book screen. For details of the phone book screen, refer to "(2) Phone book screen".
AT command	Modem standard	Select this item when using the modem-standard AT command to connect the line.
	AT command setting	Enter the AT command. If the modem standard cannot be selected to connect the line, choose this item and enter the AT command. If the AT command has been selected on the AT command registration screen, the data of the AT command is displayed. Setting range: 70 characters Setting characters: ASCII code
	Title	The title of the AT command selected on the AT command registration screen appears.
	Browse	Used to display the AT command registration screen. For details of the AT command registration screen, refer to "(4)" AT command registration screen".
	Help of AT command	Used to display the AT command help.
Details setting		Used to display the detail setting screen. For details of the detail setting screen, refer to "(6) Detail setting screen".

(2) Phone book screen
Set the telephone numbers used on the line setting screen.
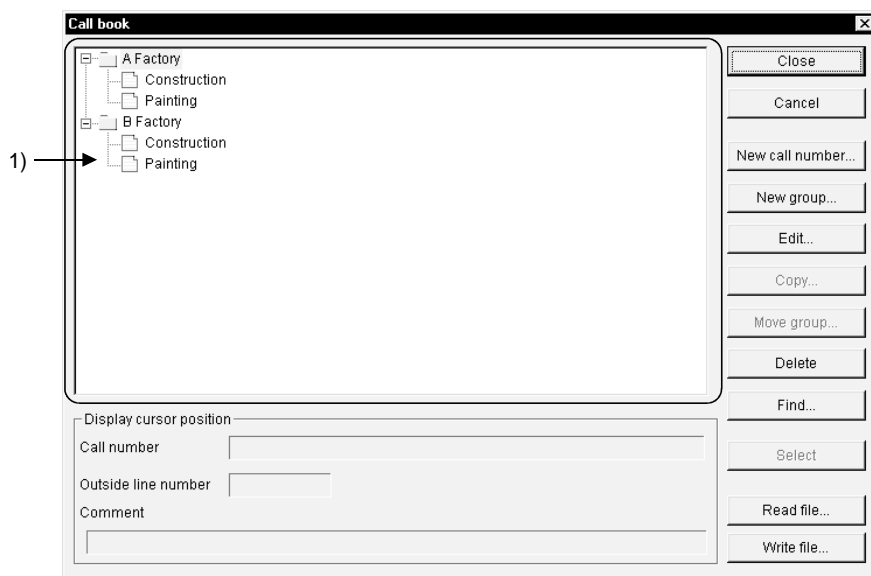
Item	Description
1) (Registered phone number display list)	Displays the group names and other end names.
Choice display	Displays the settings of the other end selected in the registered phone number display list.
Close	Used to update the edited data and close the phone book screen.
Cancel	Used to discard the edited data and close the phone book screen.
New call number	Used to display the new phone number setting screen. For details of the new phone number setting screen, refer to "(3) New phone number setting, phone number editing screens".
New group	Used to create a new group. Setting range: 50 characters
Edit	Used to display the phone number editing screen. For details of the phone number editing screen, refer to "(3) New phone number setting, phone number editing screens".
Copy	Used to copy the other end selected in the registered phone number display list to another group.
Move group	Used to move the other end selected in the registered phone number display list to another group.
Delete	Used to delete the other end in the group selected in the registered phone number display list. You cannot batch-delete a group. Delete a group after deleting all other ends in the group.
Find	Used to search the registered other end names or telephone numbers for data.
Select	Used to display on the line setting screen the other end selected in the registered phone number display list.
Read file	Used to read the settings of the phone book screen saved by file write.
Write file	Used to save the settings made on the phone book screen into a file.

POINT

MX Component enables read of the phone book created using GX Developer.
The phone book of GX Developer is stored in the following folders.
[User-specified folder] - [Gppw]

(3)   New phone number setting, phone number editing screens
Set the telephone number to be registered to the phone book.

Item	Description
Group name	Displays the group name of the registration destination.
Destination name	Enter the other end of the telephone number to be registered. Setting range: 50 characters
Call number	Set the telephone number. Setting range: 50 characters Setting characters: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, -, *, #
Outside line number	Set the outside line access number. Setting range: 10 characters Setting characters: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, -, *, #
For only line connection	When the password has been set to the A6TEL, Q6TEL, Q Series Corresponding C24, making this setting automatically starts password setting and connects the line. If the password has not been set, this setting is ignored. Setting range: 4 characters Setting characters: ASCII code
Memo	Enter the memo for the registered data. Setting range: 60 characters

(4) AT command registration screen
Set the AT commands used on the line setting screen.

Item	Description
1) (Registered AT command display list)	Displays a list of titles of the registered AT commands.
Choice display	Used to display the registered data selected in the registered AT command display list.
Close	Used to update the edited data and close the AT command registration screen.
Cancel	Used to discard the edited data and close the AT command registration screen.
New AT command	Used to display the new AT command registration screen. For details of the new AT command registration screen, refer to "(5) New AT command registration, AT command editing screens".
Edit	Used to display the AT command editing screen for the AT command selected in the registered AT command display list. For details of the AT command editing screen, refer to "(5) New AT command registration, AT command editing screens".
Copy	Used to copy the registered AT command. Selecting the registered data to be copied in the registered AT command display list and clicking Copy displays the group designation dialog box. Choose the copy destination group and click OK .
Move group	Used to move the registered AT command to any other end. Selecting the registered data to be moved in the registered AT command display list and clicking Move group displays the group designation dialog box. Choose the move destination group and click OK .
Delete	Used to delete the AT command selected in the AT command display list.
Select	Used to display the AT command selected in the AT command display list on the line setting screen.
Read file	Used to read the settings of the AT command registration screen saved by file write.
Write file	Used to save the settings made on the AT command registration screen into a file.

POINT

MX Component can the AT commands created using GX Developer.
The AT commands of GX Developer are stored in the following folders.
[User-specified folder] - [Gppw]

(5) New AT command registration, AT command editing screens

Register a new AT command and edit the AT command.

```
AT command registration                                    [×]

  Group name

  Modem at MELSOFT application side

  Title

  ****Corporation ****Type Modem

  AT command

  AT&C1Q0V1\N3&D2&K3


              OK          Cancel      Help of AT command...
```

Item	Description
Group name	Displays the group name where the AT command to be registered.
Title	Enter the title of the AT command to be registered. Setting range: 60 characters
AT command	Enter the AT command for modem initialization. Setting range: 70 characters Setting characters: ASCII code
Help of AT command	Used to display the AT command help.

(6) Detail setting screen
Set details for telephone line connection.
Make settings according to the modem used.

Item	Description
Line connection CD signal wait time	Set the line connection CD signal confirmation time. (Default: 90) Increase the set time if the CD signal does not turn ON within the set time depending on the line-connected region (example: overseas). Setting range: 1 to 999
Line connection modem report waiting time	Set the line connection modem report wait time. (Default: 5) Increase the set time if the response speed of the modem is low. Setting range: 1 to 999
Line disconnection CD signal wait time	Set the line disconnection CD signal confirmation time. (Default: 5) Increase the set time if the CD signal does not turn OFF within the preset time depending on the line-connected region (example: overseas). Setting range: 1 to 999
Line disconnection delay time	Set the line disconnection delay time. (Default: 3) Increase the set time if the response speed of the modem is low. Setting range: 1 to 999
Data transmission delay time	Set the data transmission delay time. (Default: 0) Increase the set time if the response speed of the modem is low. Setting range: 1 to 999
AT command response wait time	Set the AT command response wait time. (Default: 1) Increase the set time if the response speed of the modem is low. Setting range: 1 to 999
Password cancellation response wait time	Set the password cancellation response wait time. (Default: 5) Increase the set time if the quality of the line with the other end is low. Setting range: 1 to 999

Item	Description
AT command/password cancellation retry count	Set the AT command/password cancellation retry count. (Default: 3) Increase the set count if the AT command cannot be sent or the password cannot be canceled. Setting range: 1 to 999
Line callback cancel wait time	Set the Line callback cancel wait time. (Default: 90) Increase the set time if the line at the other end (Q series corresponding C24 side) is not disconnected within the set time depending on the line-connected region (example: overseas). Setting range: 1 to 180
Call back delay time	Set the callback delay time. (Default: 20) Increase the set time if the device for relaying connection to the line (example: modem, etc.) requires the set time for reconnection after line disconnection. Setting range: 1 to 999
Call back reception waiting time-out	Set the callback reception waiting time-out. (Default: 120) Increase the set time if a time-out occurs in a callback receive waiting status. Setting range: 1 to 3600

5.2 PLC Monitor Utility

This section explains how to operate and set the PLC monitor utility.

5.2.1 Operations on transfer setting screen

This screen is used to set connection from the IBM-PC/AT compatible to the PLC CPU.

(1) Selected menu item
Choose [Online]-[Transfer setup] on the menu bar.
(This screen also appears when the PLC monitor utility is started.)

(2) Dialog box
(a) When choosing the utility setting type

Item	Description
Utility setting type	Choose when using the logical station number set on the communication setup utility to make transfer setting.
Logical station number	Choose the logical station number set on the communication setup utility. When the logical station number where the modem communication data have been set is selected, the following screen appears after OK is clicked. When you have set the password, enter the password and click OK .
Connect Retry Times	Set the number of retries to be made when an error occurs during monitoring with the PLC monitor utility.(default : 0) Setting range : 0 to 9

> POINT
>
> Before specifying the logical station number, confirm that the settings of the logical station number, such as the CPU type and station number, are correct on the communication setup utility.

(b) When choosing the program setting type

Item	Description
Program setting type	Choose when the program setting type is used to create programs.
Wizard	Used to start the communication setting wizard and make transfer setting. When the logical station number where the modem communication data have been set is selected, the following screen appears after OK is clicked. When you have set the password, enter the password and click OK.
Connect Retry Times	Set the number of retries to be made when an error occurs during monitoring with the PLC monitor utility.(default : 0) Setting range : 0 to 9

POINT

When the program setting type is selected, clicking the PLC or personal computer sketch enables you to change the details of the transfer setting.
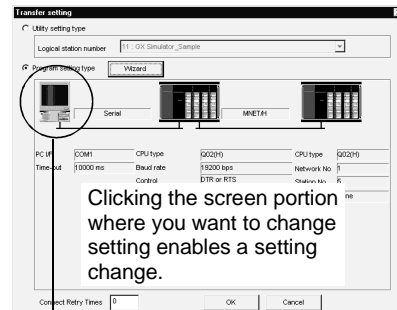
Clicking the screen portion where you want to change setting enables a setting change.
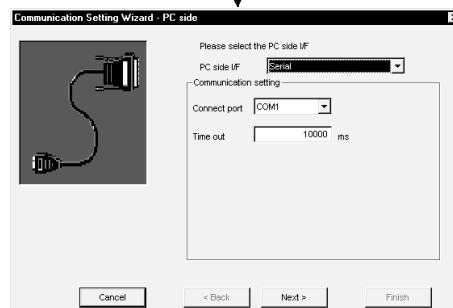
5.2.2 Operations on device batch screen

This screen is used to monitor only the specified one type of devices.

Item	Description
Device	Enter the device name to be batch-monitored.
Start monitor (Stop monitor)	Used to start (stop) monitor.
Monitor format	Set the monitor format. (Default: Bit & Word)
	<table><tr><td>Item</td><td>Description</td></tr><tr><td>Bit & Word</td><td>Sets the monitor screen to the bit and word display.</td></tr><tr><td>Bit</td><td>Sets the monitor screen to the bit display only.</td></tr><tr><td>Word</td><td>Sets the monitor screen to the word display only.</td></tr></table>
Display	Set the display format of the device values to be displayed when the monitor format is "Bit & Word" or "Word". (Default: 16 bit integer)
	<table><tr><td>Item</td><td>Description</td></tr><tr><td>16 bit integer</td><td>Sets to the 16-bit integer display.</td></tr><tr><td>32 bit integer</td><td>Sets to the 32-bit integer display.</td></tr><tr><td>Real number</td><td>Sets to the real number display.</td></tr><tr><td>ASCII character</td><td>Sets to the ASCII character string display.</td></tr></table>
Data format	Set the radix when the display is "16 bit integer" or "32 bit integer". (Default: DEC)
	<table><tr><td>Item</td><td>Description</td></tr><tr><td>DEC</td><td>Sets to the decimal display.</td></tr><tr><td>HEX</td><td>Sets to the hexadecimal display.</td></tr></table>

Item	Description
Bit order	Set the order in which the bit devices being monitored are arranged. | Item	Description
F-0	Arranged in order of F, E, ... 1, 0 from left to right.
0-F	Arranged in order of 0, 1, ... E, F from left to right.	
1) (Monitor screen)	Shows the device statuses. Clicking the device name shows the device write screen. For details of the device write screen, refer to "Section 5.2.5 Operations on device write screen".
2) (Target CPU name)	Shows the communication target CPU name specified on the communication setting wizard screen.
3) (Communication path information)	Shows such information as the network type, network number, first I/O address and station number.
4) (Logical station number)	Shows the logical station number set for the utility setting type. This does not appear when the program setting type is used.

POINT

(1) For the bit device statuses, 1 indicates an ON status and 0 an OFF status.
(2) Bit devices are monitored in units of 16 points.
   If any device outside the range supported by the PLC CPU is included in the 16 points, its value is displayed "0".
(3) Specifying the device memory in the U✳\G✳ format enables the buffer memory to be monitored.
(4) When monitoring the set values of the timers and counters, indirectly specify the data registers.
(5) For the X and Y devices of the FXCPU, type their device numbers in octal.
(6) For the C devices of the FXCPU, C0 to C199 (16 bit) and C200 and later (32 bit) are displayed separately.
(7) Devices cannot be monitored if the connection destination is not established.
(8) During monitoring, you cannot make transfer setting.
(9) During monitoring, "✳" flickers under the scroll button.

5.2.3 Operations on buffer memory screen

This screen is used to monitor only the specified one type of buffer memory.

Item	Description
Module I/O	Type the first address of the module to be monitored.
Memory address	Enter the address of the buffer memory to be monitored in hexadecimal or decimal.
Start monitor (Stop monitor)	Used to start (stop) monitor.
Monitor format	Set the monitor format. (Default: Bit & Word) | Item	Description
Bit & Word	Sets the monitor screen to the bit and word display.
Bit	Sets the monitor screen to the bit display only.
Word	Sets the monitor screen to the word display only.	
Display	Set the display format of the device values to be displayed when the monitor format is "Bit & Word" or "Word". (Default: 16 bit integer) | Item	Description
16 bit integer	Sets to the 16-bit integer display.
32 bit integer	Sets to the 32-bit integer display.
Real number	Sets to the real number display.
ASCII character	Sets to the ASCII character string display.	
Data format	Set the radix when the display is "16 bit integer" or "32 bit integer". (Default: DEC) | Item	Description
DEC	Sets to the decimal display.
HEX	Sets to the hexadecimal display.	

Item	Description	
Bit order	Set the order in which the bit devices being monitored are arranged.	
	Item	Description
	F-0	Arranged in order of F, E, ... 1, 0 from left to right.
	0-F	Arranged in order of 0, 1, ... E, F from left to right.
1) (Monitor screen)	Shows the buffer memory status.	
2) (Target CPU name)	Shows the communication target CPU name specified on the communication setting wizard screen.	
3) (Communication path information)	Shows such information as the network type, network number, first I/O address and station number.	
4) (Logical station number)	Shows the logical station number set for the utility setting type. This does not appear when the program setting type is used.	

POINT

(1) For the bit device statuses, 1 indicates an ON status and 0 an OFF status.
(2) For access to the FXCPU, enter the block number of the special expansion equipment into Module I/O.
(3) Devices cannot be monitored if the connection destination is not established.
(4) During monitoring, you cannot make transfer setting.
(5) During monitoring, "＊" flickers under the scroll button.
(6) During gateway function communication, devices cannot be monitored.

5.2.4 Operation on entry device screen

This screen is used to monitor the specified devices on a single screen at the same time.

Item	Description
$\boxed{\text{Register device}}$	Used to register the device to be monitored. Clicking the $\boxed{\text{Register device}}$ button shows the following screen. **(inner table)** | Item	Description
Device	Type the device to be registered.
Value	Set the value to be entered when a word device is specified. (Default: DEC) | Item	Description
DEC	Sets to decimal.
HEX	Sets to hexadecimal.	
Display	Set the display format when a word device is specified. (Default: 16 bit integer) | Item	Description
16 bit integer	Sets to the 16-bit integer display.
32 bit integer	Sets to the 32-bit integer display.
Real number	Sets to the real number display.
ASCII character	Sets to the ASCII character string display.	
$\boxed{\text{Register}}$	Used to register the device.
$\boxed{\text{Close}}$	Used to close the dialog box.	
$\boxed{\text{Delete device}}$	Used to delete the device to be monitored.
$\boxed{\text{Clear device}}$	Used to delete all devices registered in device entry monitor from the monitor screen.
$\boxed{\text{Start monitor}}$ ($\boxed{\text{Stop monitor}}$)	Used to start (stop) monitor.

Item	Description
1) (Monitor screen)	Shows the device statuses. Clicking the device name shows the device write screen. For details of the device write screen, refer to "Section 5.2.5 Operations on device write screen".
2) (Target CPU name)	Shows the communication target CPU name specified on the communication setting wizard screen.
3) (Communication path information)	Shows such information as the network type, network number, first I/O address and station number.
4) (Logical station number)	Shows the logical station number set for the utility setting type. This does not appear when the program setting type is used.

POINT

(1) When monitoring the set values of the timers and counters, indirectly specify the data registers.

(2) Devices cannot be monitored if the connection destination is not established.

(3) During monitoring, you cannot make transfer setting.

(4) During monitoring, "✳" flickers under the scroll button.

5.2.5 Operations on device write screen

This screen is used to change the ON/OFF of a bit device or the present value of a word device or buffer memory.
This screen is displayed by double-clicking the monitor screen of the corresponding tab.

Item		Description
Bit device	Device	Enter the device name.
	Force ON	Used to forcibly change the specified device to the ON status.
	Force OFF	Used to forcibly change the specified device to the OFF status.
	Toggle force	Used to forcibly change the specified device from the ON to OFF status or from the OFF to ON status.
Word device/Buffer memory	Device	Choosing "Device" enables you to enter the word device to which write will be performed.
	Buffer memory	Choosing "Buffer memory" enables you to enter the module's first I/O and buffer memory address.
	Setting value	Type the value to be written. The input range is as indicated below. <table><tr><th>Item</th><th>Description</th></tr><tr><td>16 bit integer</td><td>–32768 to 32767</td></tr><tr><td>32 bit integer</td><td>–2147483648 to 2147483647</td></tr><tr><td>Real number</td><td>1.175494351e–38 to 3.402823466e+33 Number of valid digits: 13 digits (max. 13 characters displayed)</td></tr></table>
	Set	Used to write the set data.

5.2.6 Operations on clock setting screen

This screen is used to read or change the clock data of the PLC.

(1)   Selected menu item
Choose [Online]-[Set time] on the menu bar.

(2)   Dialog box
The screen provided for explanation is the one displayed when the QCPU (Q mode) is connected.
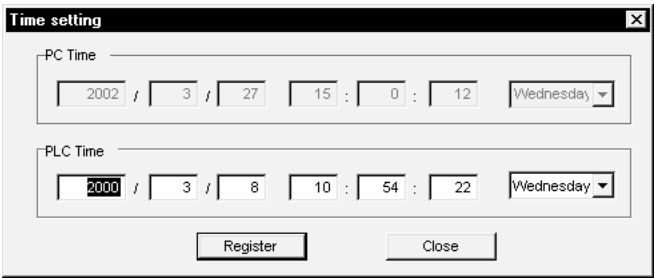
Item	Description
PC Time	Shows the time of the personal computer. (Write disabled)
PLC Time	Shows the time of the PLC.
Register	Used to write the "PLC Time" information to the PLC CPU.
Close	Used to close the clock setting screen.

POINT

Clock setting is not available when either of the following communications is selected.
• GX Simulator communication (only the time of the personal computer is displayed.)
• Gateway function communication (an error occurs.)

5.2.7 Operations on telephone line connection, disconnection screens

Connect and disconnect the telephone line for modem communication.

(1) Menu to be selected
   (a) Telephone line connection
      Choose [Online] - [Connect] on the menu bar.

   (b) Telephone line disconnection
      Choose [Online] - [Disconnect] on the menu bar.

(2) Dialog box for telephone line connection
   For telephone line connection, the following dialog box appears.
   Enter the password and click OK.
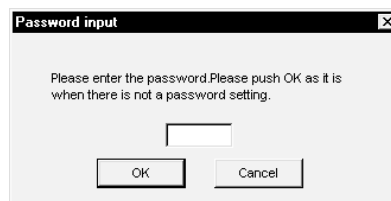
6 COMMUNICATION SETTING EXAMPLES OF THE UTILITY SETTING TYPE

This chapter explains the setting procedure and setting example of each communication path when the utility setting type is used for programming.

6.1 Computer Link Communication

This section provides the computer link communication procedure and its setting example using the utility setting type.

6.1.1 Switch settings of computer link modules

This section gives the switch settings of computer link modules for use of MX Component. The following sketches are used to explain each module.

<For 1:1 communication>   <For 1:n communication>

＊1: Limited for use of only CH1   ＊2: Limited for use of both CH1 and CH2

POINT
When using MX Component, the settings other than "As set by user" in the tables are fixed as given in the tables.

6

(1) C24, UC24

Switch *1		For 1:1 communication	For 1:n communication	
			Module 1)	Module 2)
Mode setting switch		1 (format 1)	A (format 1)	5 (format 1)
Station number setting switches		0	As set by user	
Transmission specifications setting switches	Main channel setting	OFF(RS-232C)	OFF(RS-232C)	OFF(RS-422)
	Data bit setting	As set by user	As set by user *2	
	Transmission speed setting	As set by user	As set by user *2	
	Parity bit yes/no setting	As set by user	As set by user *2	
	Stop bit setting	As set by user	As set by user *2	
	Sum check yes/no setting	As set by user	As set by user *2	
	Online change enable/disable setting	As set by user		
	Computer link/multidrop setting	ON (computer link)	ON (computer link)	ON (computer link)

*1: For switch numbers, refer to the computer link module manual.

*2: Make the same settings to Module 1 and Module 2.

(2) QC24(N)

Switch (Switch Number)		For 1:1 communication		For 1:n communication			
				Module 1)		Module 2)	
		CH1 side	CH2 side	CH1 side	CH2 side	CH1 side	CH2 side
Mode setting switch		5(format 5)		0 or 5 (format 5)	5(format 5)	5(format 5)	
Station number setting switch		0		As set by user			
Transmission specifications setting switches	Operation setting switch (SW01)	OFF (independent operation)		OFF (independent operation)	ON or OFF *1	OFF (independent operation)	
	Data bit setting (SW02)	ON(8 bit)					
	Parity bit yes/no setting (SW03)	As set by user		As set by user *2			
	Even parity/odd parity setting (SW04)	As set by user		As set by user *2			
	Stop bit setting (SW05)	OFF(1 bit)					
	Sum check yes/no setting (SW06)	ON(yes)					
	Online change enable/disable setting (SW07)	As set by user					
	Setting change enable/disable setting (SW08)	As set by user		As set by user *2			
	Transmission speed setting (SW09 to SW12)	As set by user		As set by user *2			
	— (SW13 to SW15)	All OFF					

*1: Set to ON if the CH1 side mode setting switch setting is 0 or to OFF if the setting is 5 (format 5).

*2: Make the same settings to Module 1 and Module 2.

(3) Q series-compatible C24
     (a) For 1:1 communication

Item	Settings		Set Value
	b15 to b8	b7 to b0	
Switch 1	CH1 communication speed	CH1 transmission setting＊1	0000H
Switch 2	—	CH1 communications protocol	0000H
Switch 3	CH2 communication speed	CH2 transmission setting＊1	0000H＊2
Switch 4	—	CH2 communications protocol	0000H＊2
Switch 5	Module station number		0000H

＊1: Settings of CH1 and CH2 are indicated below.

＊2: When using CH2, enter any value set by the user.

b7	b6	b5	b4	b3	b2	b1	b0

CH1 side
CH2 side

Bit	Description	Settings	
		CH1 transmission setting	CH2 transmission setting
b0	Operation setting	0 (independent)	0 (independent)
b1	Data bit	0 (7)	0 (7)
b2	Parity bit	0 (no)	0 (no)
b3	Odd/even parity	0 (odd)	0 (odd)
b4	Stop bit	0 (1)	0 (1)
b5	Sum check code	0 (no)	0 (no)
b6	Online change ＊3	0 (disable)	0 (disable)
b7	Setting change	0 (disable)	0 (disable)
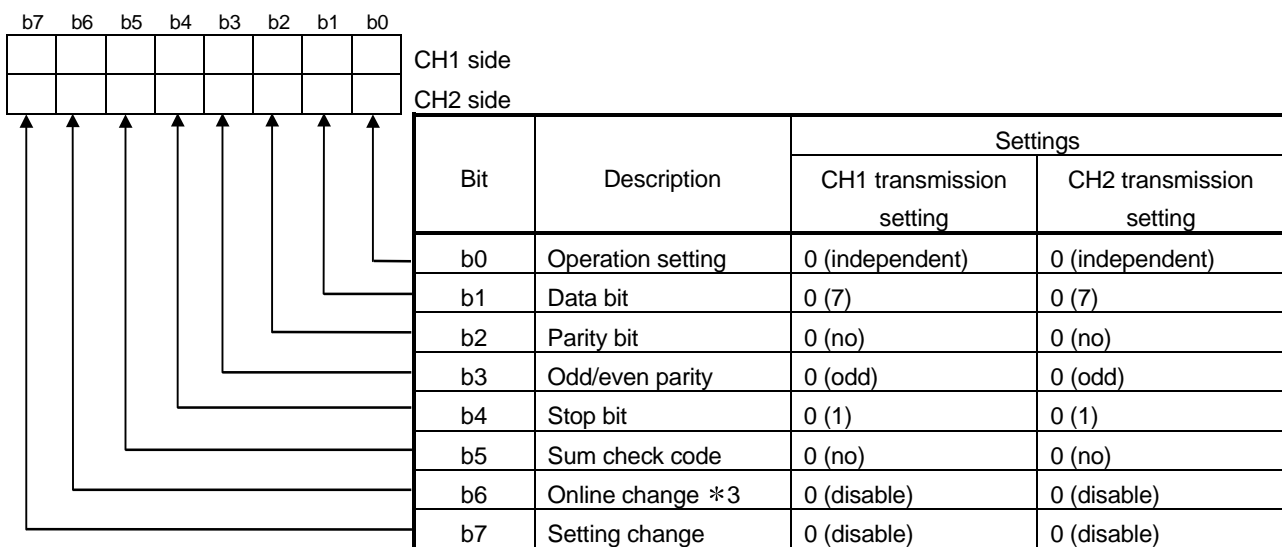
＊3: When the communication protocol is set to GX Developer connection (0H), the
online change bit (b6) setting is made invalid to enable online change
regardless of the online change setting.
Refer to the Q series-compatible C24 manual for details.

(b) For 1:n communication

Module 1)

Item	Settings		Set Value
	b15 to b8	b7 to b0	Synchronous operation
Switch 1	CH1 communication speed	CH1 transmission setting*1	0726H
Switch 2	—	CH1 communications protocol	0008H
Switch 3	CH2 communication speed	CH2 transmission setting*1	0727H
Switch 4	—	CH2 communications protocol	0000H
Switch 5	Module station number		As set by user

*1: Settings of CH1 and CH2 are indicated below.

Bit	Description	Settings	
		Synchronous operation	
		CH1 transmission setting	CH2 transmission setting
b0	Operation setting	Match to module 2) setting.	
b1	Data bit	Match to module 2) setting.	
b2	Parity bit	Match to module 2) setting.	
b3	Odd/even parity	Match to module 2) setting.	
b4	Stop bit	Match to module 2) setting.	
b5	Sum check code	Match to module 2) setting.	
b6	Online change	Match to module 2) setting.	
b7	Setting change	Match to module 2) setting.	

Module 2)

Item	Settings		Set Value
	b15 to b8	b7 to b0	Synchronous operation
Switch 1	CH1 communication speed	CH1 transmission setting＊1	0726H
Switch 2	—	CH1 communications protocol	0008H
Switch 3	CH2 communication speed	CH2 transmission setting＊1	0727H
Switch 4	—	CH2 communications protocol	0000H
Switch 5	Module station number		As set by user

＊1: Settings of CH1 and CH2 are indicated below.

b7	b6	b5	b4	b3	b2	b1	b0	
								CH1 side
								CH2 side

Bit	Description	Settings	
		Synchronous operation	
		CH1 transmission setting	CH2 transmission setting
b0	Operation setting	0 (independent)	1 (synchronous)
b1	Data bit	1 (8)	1 (8)
b2	Parity bit	1 (yes)	1 (yes)
b3	Odd/even parity	0 (odd)	0 (odd)
b4	Stop bit	0 (1)	0 (1)
b5	Sum check code	1 (yes)	1 (yes)
b6	Online change ＊2	0 (disable)	0 (disable)
b7	Setting change	0 (disable)	0 (disable)

＊2: When the communication protocol is set to GX Developer connection (0H), the
  online change bit (b6) setting is made invalid to enable online change
  regardless of the online change setting.
  Refer to the Q series-compatible C24 manual for details.

6.1.2 Accessing procedure

The procedure for making access to the PLC CPU using computer link communication will be explained in the following order.
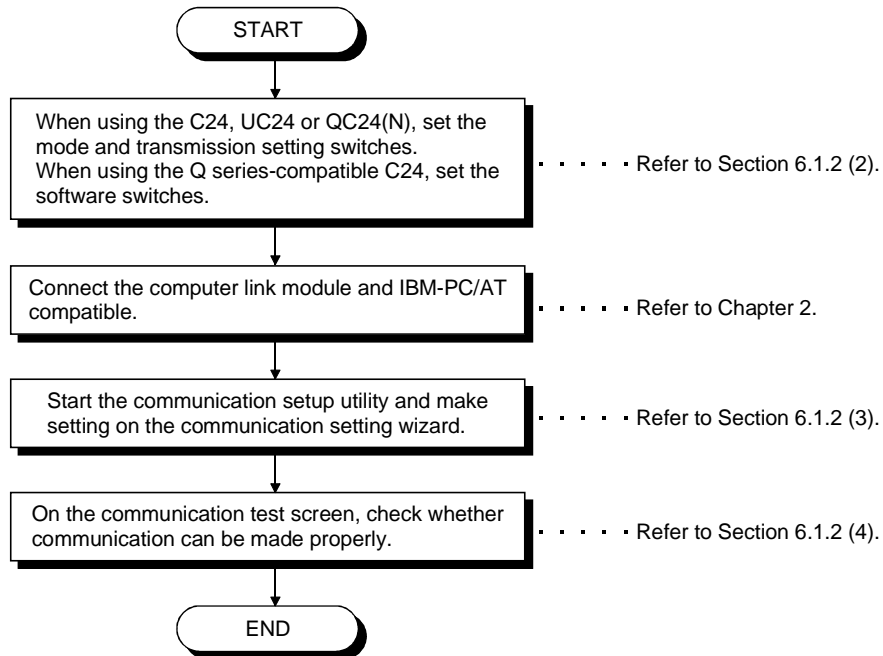
```
        ┌─────────────┐
        │    START    │
        └──────┬──────┘
               ▼
┌───────────────────────────────────────┐
│ When using the C24, UC24 or QC24(N),   │
│ set the mode and transmission setting   │· · · · Refer to Section 6.1.2 (2).
│ switches.                               │
│ When using the Q series-compatible C24, │
│ set the software switches.              │
└──────────────────┬──────────────────────┘
                   ▼
┌───────────────────────────────────────┐
│ Connect the computer link module and    │· · · · Refer to Chapter 2.
│ IBM-PC/AT compatible.                   │
└──────────────────┬──────────────────────┘
                   ▼
┌───────────────────────────────────────┐
│ Start the communication setup utility    │· · · · Refer to Section 6.1.2 (3).
│ and make setting on the communication    │
│ setting wizard.                          │
└──────────────────┬──────────────────────┘
                   ▼
┌───────────────────────────────────────┐
│ On the communication test screen, check  │· · · · Refer to Section 6.1.2 (4).
│ whether communication can be made        │
│ properly.                                │
└──────────────────┬──────────────────────┘
                   ▼
        ┌─────────────┐
        │     END     │
        └─────────────┘
```

(1)   System examples

The following system examples are used in this section.

The explanation given in "(3) Setting the logical station number (Setting on communication setting wizard)" and later uses the system example for 1:n communication.

<For 1:1 communication>

| Q25H CPU | Q series-compatible C24 (Sta. No.1) |

IBM-PC/AT compatible (MX Component) COM1 is used.

<For 1:n communication>

Module 1)

| Q2A CPU | QC24 (Sta. No.1) |

Computer link (Multidrop communication)

Module 2)

| Q2A CPU | QC24 (Sta. No.3) |

Logical station number of "1" is used.

IBM-PC/AT compatible (MX Component) COM1 is used.
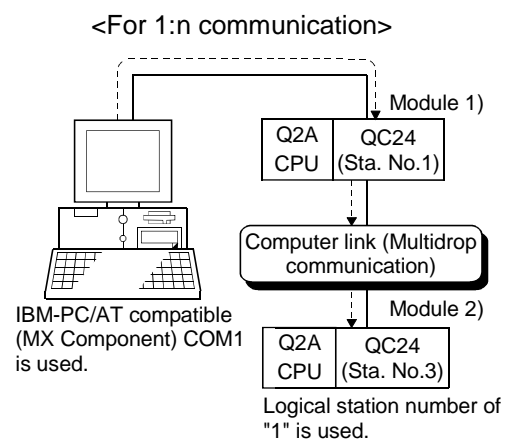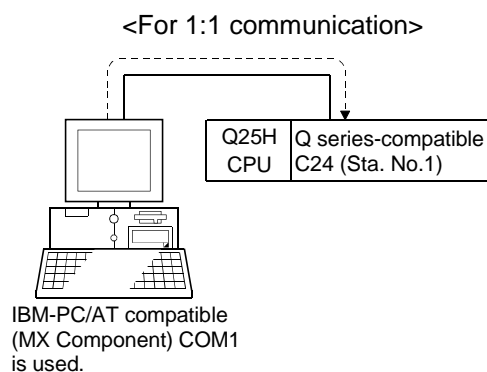
(2) Making the switch settings of the computer link module
    (a) For 1:1 communication

Item	Settings		Set Value
	b15 to b8	b7 to b0	
Switch 1	CH1 communication speed	CH1 transmission setting *1	0000H
Switch 2	—	CH1 communications protocol	0000H
Switch 3	CH2 communication speed	CH2 transmission setting *1	0000H
Switch 4	—	CH2 communications protocol	0000H
Switch 5	Module station number		0000H

*1: Settings of CH1 and CH2 are indicated below.

b7	b6	b5	b4	b3	b2	b1	b0

CH1 side
CH2 side

Bit	Description	Settings	
		CH1 transmission setting	CH2 transmission setting
b0	Operation setting	0 (independent)	0 (independent)
b1	Data bit	0 (7)	0 (7)
b2	Parity bit	0 (no)	0 (no)
b3	Odd/even parity	0 (odd)	0 (odd)
b4	Stop bit	0 (1)	0 (1)
b5	Sum check code	0 (no)	0 (no)
b6	Online change *2	0 (disable)	0 (disable)
b7	Setting change	0 (disable)	0 (disable)

*2: When the communication protocol is set to GX Developer connection (0H), the
online change bit (b6) setting is made invalid to enable online change
regardless of the online change setting.
Refer to the Q series-compatible C24 manual for details.

(b) For 1:n communication

Switch (Switch Number)		Settings			
		Module 1)		Module 2)	
		CH1 side	CH2 side	CH1 side	CH2 side
Mode setting switch		0	5 (format 5)	5 (format 5)	
Station number setting switches		1		3	
Transmission specifications setting switches	Operation setting switch (SW01)	OFF (independent operation)	ON (synchronous operation)	OFF (independent operation)	
	Data bit setting (SW02)	ON (8 bit)		ON (8 bit)	
	Parity bit yes/no setting (SW03)	ON (yes)		ON (yes)	
	Even parity/odd parity setting (SW04)	OFF (odd)		OFF (odd)	
	Stop bit setting (SW05)	OFF (1 bit)		OFF (1 bit)	
	Sum check yes/no setting (SW06)	ON (yes)		ON (yes)	
	Online change enable/disable setting (SW07)	ON (enable)		ON (enable)	
	Setting change enable/disable setting (SW08)	OFF (disable)		OFF (disable)	
	Transmission speed setting (SW09 to SW12)	19200bps SW / Setting SW09 / OFF SW10 / ON SW11 / ON SW12 / OFF		19200bps SW / Setting SW09 / OFF SW10 / ON SW11 / ON SW12 / OFF	
	— (SW13 to SW15)	All OFF		All OFF	

(3)   Setting the logical station number (Setting on communication setting wizard)

Logical station number setting will be described using the system example for 1:n communication.

1) Start the communication setup utility and choose the communication setting wizard.

2) Type "1" in Logical station number and click the Next> button.
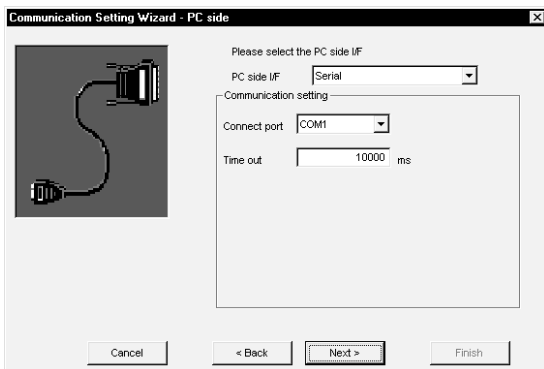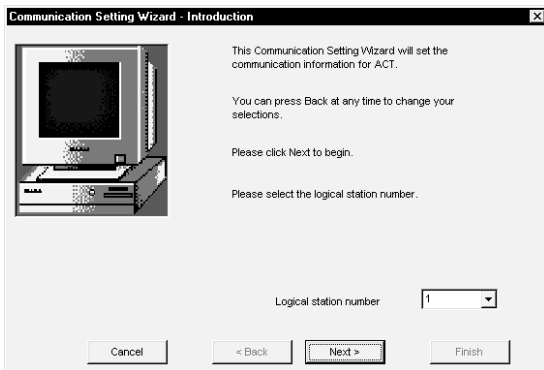
3) Make settings as indicated below and click the Next> button.

    PC side I/F   : Serial
    Connect port   : COM1
    Time out   : 10000
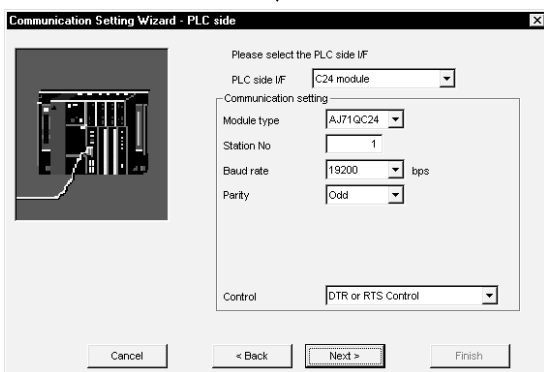
4) Make settings as indicated below and click the Next> button.

    PLC side I/F   : C24 module
    Module type   : AJ71QC24
    Station No   : 1
    Baud rate   : 19200
    Parity   : Odd
    Control   : DTR or RTS Control
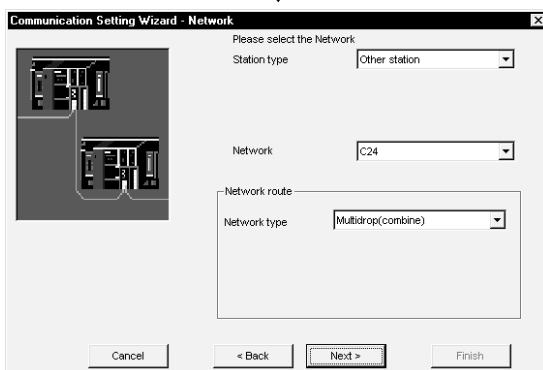
↓

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↓

5) Make settings as indicated below and click the ⌈Next>⌋ button.

Station type   : Other station
Network   : C24
Network type   : Multidrop(combine)

↓
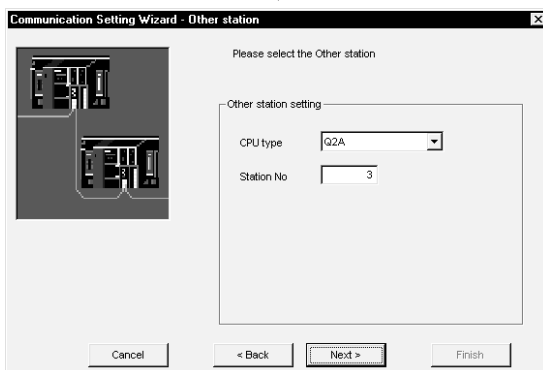
6) Make settings as indicated below and click the ⌈Next>⌋ button.

CPU type   : Q2A
Station No   : 3

↓

7) Enter a comment and click the ⌈Finish⌋ button.

↓

(Registration complete)

(4) Checking the logical station number settings (Conducting a communication test)

Check whether the computer link communication settings are correct or not, using the logical station number set in (3).

1) Display the "Target setting" tab screen and choose the logical station number "1".
Check whether the logical station number settings are correct or not.
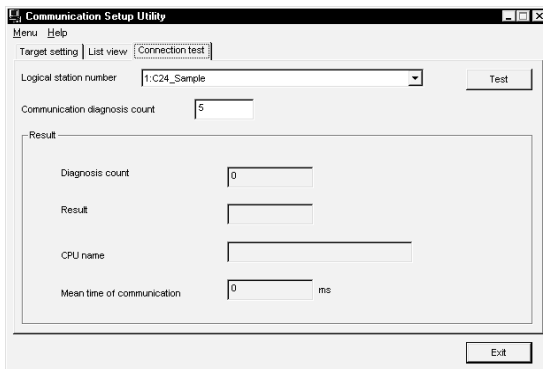
↓

2) Display the "Connection test" tab screen and set the logical station number "1".

↓

Click!

3) Click the Test button to check that communication is being performed normally.
If an error occurrs, check the error code and remove the error. The error code appears in Result. (At normal termination, "0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings are correct.
This logical station number is made applicable by user program creation and PLC monitor utility.
Collect device data, using this logical station number.

6.2 Ethernet Communication

This section provides the Ethernet communication procedure and its setting example using the utility setting type.

6.2.1 Switch settings of Ethernet modules

This section gives the switch settings of Ethernet modules for use of MX Component.

> **POINT**
>
> When using MX Component, the settings other than "As set by user" in the tables are fixed as given in the tables.

(1) Q series-compatible E71

Set the Q series-compatible E71 in "MNET/10H Ethernet module count setting" of GX Developer.

(2) QE71

Switch (Switch Number)		Setting		
		TCP/IP		UDP/IP
		When ASCII packet is used	When binary packet is used	When binary packet is used
Operation mode setting switch		0 (online)		
Communications condition setting switches	Line processing selection for TCP time-out error (SW1)	OFF		
	Data code setting (SW2)	ON (ASCII code)	OFF(binary code)	As set by user
	Automatic start mode setting (SW3)	OFF		ON
	— (SW4 to SW6)	All OFF		
	CPU communications timing setting (SW7)	ON		
	Initial timing setting (SW8)	OFF		

(3) E71

Switch *1		Setting			
		TCP/IP		UDP/IP	
		When ASCII packet is used	When binary packet is used	When ASCII packet is used	When binary packet is used
Operation mode setting switch		0 (online)			
Communications condition setting switches	Line processing selection for TCP time-out error	OFF			
	Data code setting	ON (ASCII code)	OFF(binary code)	ON (ASCII code)	OFF(binary code)
	CPU communications timing setting)	ON			
	Initial timing setting	OFF			

*1: For switch numbers, refer to the E71 module manual.

6.2.2 Accessing procedure

The procedure for making access to the PLC CPU using Ethernet communication will be explained in the following order.

```
                    ┌─────────────┐
                    │    START    │
                    └──────┬──────┘
                           │
        ┌──────────────────────────────────┐
        │ Set the Ethernet module switches. │ · · · · · Refer to Section 6.2.1
        └──────────────────┬───────────────┘
                           │
        ┌──────────────────────────────────┐
        │ Set the Ethernet module parameters. │ · · · · · Refer to Section 6.2.2 (3), (4).
        └──────────────────┬───────────────┘
                           │
        ┌──────────────────────────────────┐
        │ Connect the Ethernet module and IBM-PC/AT │ · · · · · Refer to Chapter 2.
        │ compatible.                       │
        └──────────────────┬───────────────┘
                           │
        ┌──────────────────────────────────┐
        │ Edit the HOSTS file. *1           │
        └──────────────────┬───────────────┘
                           │
        ┌──────────────────────────────────┐
        │ Start the communication setup utility and make │ · · · · · Refer to Section 6.2.2 (6).
        │ setting on the communication setting wizard. │
        └──────────────────┬───────────────┘
                           │
        ┌──────────────────────────────────┐
        │ On the communication test screen, check whether │ · · · · · Refer to Section 6.2.2 (7).
        │ communication can be made properly. │
        └──────────────────┬───────────────┘
                           │
                    ┌─────────────┐
                    │     END     │
                    └─────────────┘
```

*1: You need not edit the HOSTS file when entering the IP address in the host name of the communication setting utility and the ActHostAddress property of the Ethernet communication control.

(1) System examples

The following system examples are used in this section.
The explanation given in "(6) Setting the logical station number (Setting on communication setting wizard)" and later uses the system example for Q series-compatible E71.

(a) Q series-compatible E71 system example

(b) QE71 system example

(c) E71 system example
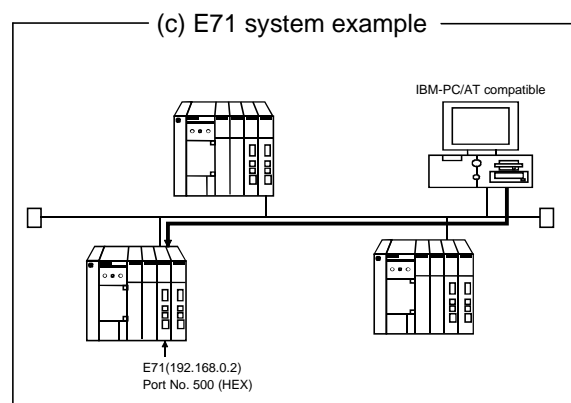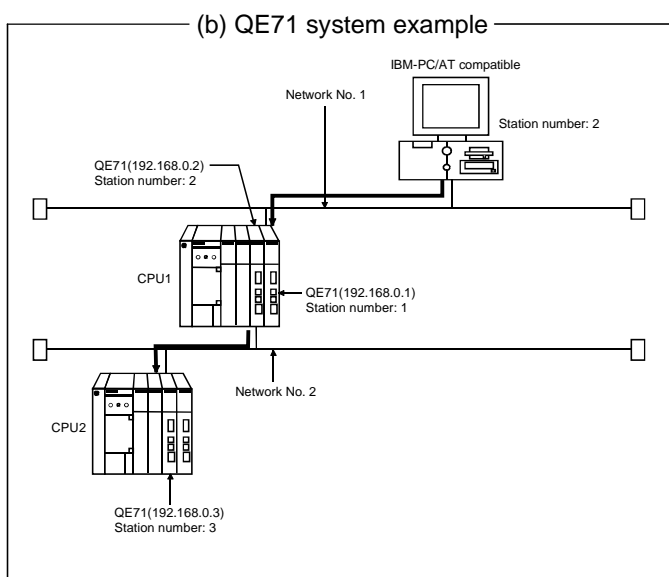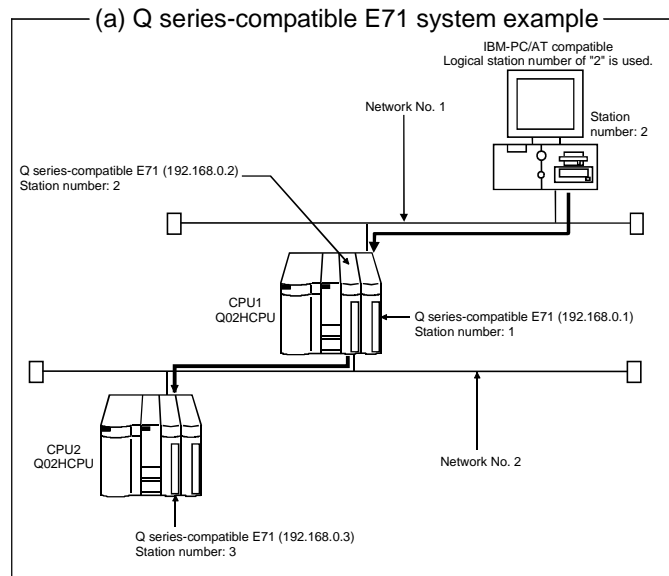
(2) Making the switch settings of the Ethernet modules

The switch setting examples in this section are the same as in "Section 6.2.1 Switch settings of the Ethernet modules".
For details, refer to "Section 6.2.1 Switch settings of the Ethernet modules".

(3) Making parameter setting
Parameter setting may either be made from the network parameter "MELSECNET/ETHERNET setting screen" of GX Developer or from a sequence program.
The network parameters of GX Developer must be used to set the Q series-compatible E71 (TCP/IP, UDP/IP) or QE71 (UDP/IP), or a sequence program used to set the QE71 (TCP/IP) or E71 (TCP/IP, UDP/IP).

(a) Q series-compatible E71
In the network parameters, set the network type, first I/O No., network No., station number, mode and operational settings.

CPU to Be Set	Setting Screen Example
CPU1	Ethernet parameters Operational settings
CPU2	Ethernet parameters Operational settings

(b) QE71

1) For TCP/IP

The QE71 requires an initial processing and communication line open processing sequence program for use of TCP/IP.

The sequence program example is given below.

Setting Item	Set Value
TCP/IP open system	8000H (TCP, fixed buffer send)
QE71's IP address	192.168.0.2

Setting Item	Set Value
QE71's port number	500H
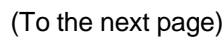
```
* Initial processing
                                                              * <IP address 192.168.0.2           >
     SM402    X1F
0    ─┤├──────┤/├────────────────────────────────[DMOV   H0C0A80002         D100           ]
          WDT ERR                                                            IP addre
          detectio                                                          ss
          n
                                                              * <Set IP address                 >
     ├────────────────────────────────────────────[TO     H0     K0     D100       K2      ]
                                                                                IP addre
                                                                                ss
                                                             ─[SET    Y19           ]
                                                                     Initial
                                                                     request

                                                              * <Read initial error code         >
     X1A      X1F
15   ─┤├──────┤/├───────────────────────────────[FROM    H0     K105    D200       K1      ]
          WDT ERR
          detectio
          n
                                                              * <Turn OFF initial request signal >
     ├───────────────────────────────────────────────────[RST    Y19           ]
                                                                     Initial
                                                                     request
                                                              * <Initial request                 >
     ├───────────────────────────────────────────────────[PLF    M102          ]

     M102
28   ─┤├──────────────────────────────────────────────────[SET    Y17           ]
                                                                     COM ERR
                                                                     OFF
                                                              * <Clear initial error code         >
     ├────────────────────────────────────────────[TO     H0     K105    K0     K1      ]

     ├───────────────────────────────────────────────────[RST    Y17           ]
                                                                     COM ERR
                                                                     OFF
* Communication open file
                                                              * <Communicate during PLC CPU STOP >
     Y19
37   ─┤├──────────────────────────────────────[TOP    H0     H67    H8001      K1      ]
     Initial
     request
```

↓
(To the next page)

> **POINT**
>
> This sample sequence program is installed into the following folders after installation of MX Component.
>
> [User-specified folder]-[Act]-[Sample]-[Gppw]-[Qe71_tcp]

(From the preceding page)

↓

```
                                                        * <Communication method set TCP/IP >
     M2      X10    X19
45 ──┤ ├─────┤/├────┤ ├──────────────────────────────[MOVP    H8000     D110        ]
   Unopenab                                                             Setting
   le flag                                                             use purp
                                                                       ose

                                            ─────────[TOP     H0   K32  D110    K1  ]
                                                                       Setting
                                                                       use purp
                                                                       ose

                                                        * <Module port number 500H (1280)  >

                                            ─────────[MOVP    H500      D111        ]
                                                                       QE71 por
                                                                       t number

                                            ─────────[TOP     H0   K40  D111    K1  ]
                                                                       QE71 por
                                                                       t number

                                                                     [SET     Y8   ]
                                                                             Open req
                                                                             uest No.
                                                                             1

                                                        * <Read open error code              >
     X18     Y8     X10
67 ──┤ ├─────┤ ├────┤/├────────────────────────[FROM    H0    K124  D101   K1  ]
          Open req
          uest No.
          1
                                                        * <Turn OFF open request signal      >
           ─[<>    K0    D101 ]───────────────────────────[RST     Y8   ]
                                                                             Open req
                                                                             uest No.
                                                                             1
                                                        * <Turn ON unopenable flag           >
                                                                     [SET     M2   ]
                                                                             Unopenab
                                                                             le flag

     X10
83 ──┤ ├─────────────────────────────────────────────────────[PLF     M0  ]
                                                        * <Turn OFF open request signal      >
     M0
86 ──┤ ├──────────────────────────────────────────────────[RST     Y8   ]
                                                                             Open req
                                                                             uest No.
                                                                             1
                                                        * <Turn ON unopenable flag           >
                                                                     [SET     M2   ]
                                                                             Unopenab
                                                                             le flag

                                                        * < Timer until reopening (500ms)  >
                                                                              K5
     M2
91 ──┤ ├─────────────────────────────────────────────────────────(T0     )
   Unopenab
   le flag

                                                        * <Turn OFF unopenable flag (500ms)>
           T0
         ──┤ ├──────────────────────────────────────────[RST     M2   ]
                                                                             Unopenab
                                                                             le flag


100 ─────────────────────────────────────────────────────────[END     ]
```

2) For UDP/IP

For the QE71, set the network type, first I/O No., network No., group No., station number and IP address on the Ethernet parameter setting screen of GX Developer when using UDP/IP.

CPU to Be Set	Setting Screen Example
CPU1	**Ethernet parameters** |	Module No.1	Module No.2
Network type	Ethernet	Ethernet
Start I/O No.	0040	0060
Network No.	2	1
Total stations		
Group No.	0	0
Station No.	2	1
IP addressDEC	192.168. 0. 2	192.168. 0. 1
	MNET/10 routing information	MNET/10 routing information
	FTP Parameters	FTP Parameters
	Routing information	Routing information	 **Operational settings** IP Address Input format DEC. IP address 192 168 0 2 OK Cancel
CPU2	**Ethernet parameters** |	Module No.1	Module No.2
Network type	Ethernet	None
Start I/O No.	0040	
Network No.	2	
Total stations		
Group No.	0	
Station No.	3	
IP addressDEC	192.168. 0. 3	
	MNET/10 routing information	
	FTP Parameters	
	Routing information		 **Operational settings** IP Address Input format DEC. IP address 192 168 0 3 OK Cancel

(c) E71

The E71 requires an initial processing and communication line open processing sequence program.

The sequence program example is given below.

1) For TCP/IP

Setting Item	Set Value
TCP/IP open system	8000H (TCP, fixed buffer send)
E71's IP address	192.168.0.2

Setting Item	Set Value
E71's port number	500H

```
* Initial processing
                                                             * <IP address 192.168.0.2        >
       M9038      X1F
    0  ─┤├────────┤/├─                                ─[DMOV   H0C0A80002        D100        ]
       Initial    WDT ERR                                                        IP addre
       processi   detectio                                                       ss
       ng         n
                                                             * <Set IP address               >
                                                     ─[TO     H0      K0      D100    K2  ]
                                                                                 IP addre
                                                                                 ss

                                                                         ─[SET   Y19         ]
                                                                                 Initial
                                                                                 request
                                                             * <Read initial error code      >
       X1A        X1F
   19  ─┤├────────┤/├─                                ─[FROM   H0      K80     D200    K1  ]
                  WDT ERR
                  detectio
                  n
                                                             * <Turn OFF initial request signal >
                                                                         ─[RST   Y19         ]
                                                                                 Initial
                                                                                 request
                                                             * <Initial request              >
                                                                         ─[PLF   M102        ]
       M102
   34  ─┤├──                                                             ─[SET   Y17         ]
                                                                                 COM ERR
                                                                                 OFF
                                                             * <Clear initial error code     >
                                                     ─[TO     H0      K80     K0      K1  ]

                                                                         ─[RST   Y17         ]
                                                                                 COM ERR
                                                                                 OFF
* Communication open file
                                                             * <Communicate during PLC CPU STOP >
       Y19
   46  ─┤├──                                          ─[TOP    H0      H1F0    H8001   K1  ]
       Initial
       request
```

↓

(To the next page)

┌───┐
│ POINT   │
├───┤
│ This sample sequence program is installed into the following │
│ folders after installation of MX Component.   │
│ [User-specified folder]-[Act]-[Sample]-[Gppw]-[E71_tcp]   │
└───┘

(From the preceding page)

↓

```
                                                                * <Communication method set TCP/IP >
     M2     X10    X19
56  ─┤ ├───┤/├────┤ ├──┬─────────────────────────────[MOVP    H8000    D110
   Unopenab                                                             Setting
   le flag                                                              use purp
                                                                        ose

                     ├─────────────────────────────[TOP    H0    K16    D110      K1  ]
                                                                        Setting
                                                                        use purp
                                                                        ose

                                                                * <Module port number 500H(1280) >
                     ├─────────────────────────────[MOVP    H500    D111
                                                                        E71 port
                                                                        number

                     ├─────────────────────────────[TOP    H0    K24    D111      K1  ]
                                                                        E71 port
                                                                        number

                     └─────────────────────────────────────────[SET    Y8  ]
                                                                        Open req
                                                                        uest No.
                                                                        1

                                                                * <Read open error code           >
     X18    Y8     X10
88  ─┤ ├───┤ ├────┤/├──┬──────────────────────[FROM    H0    K93    D101      K1  ]
          Open req
          uest No.
          1
                                                                * <Turn OFF open request signal    >
                      ├─[<> K0    D101 ]──────┬────────────[RST    Y8  ]
                                                                        Open req
                                                                        uest No.
                                                                        1
                                                                * <Turn ON unopenable flag         >
                                              └────────────[SET    M2  ]
                                                                        Unopenab
                                                                        le flag

     X10
107 ─┤ ├────────────────────────────────────────────────[PLF    M0  ]

                                                                * <Turn OFF open request signal    >
     M0
111 ─┤ ├──┬──────────────────────────────────────────[RST    Y8  ]
                                                                        Open req
                                                                        uest No.
                                                                        1
                                                                * <Turn ON unopenable flag         >
          └──────────────────────────────────────[SET    M2  ]
                                                                        Unopenab
                                                                        le flag

                                                                * <Timer until reopening(500ms)    >
     M2                                                                  K5
114 ─┤ ├──┬──────────────────────────────────────────────────(T0    )
   Unopenab
   le flag
                                                                * <Turn OFF unopenable flag (500ms)>
          │  T0
          └─┤ ├───────────────────────────────────────[RST    M2  ]
                                                                        Unopenab
                                                                        le flag

118 ────────────────────────────────────────────────────[END ]
```

2) For UDP/IP

Setting Item	Set Value
UDP/IP open system	100H (UDP, fixed buffer send)
E71's IP address	192.168.0.2
E71's port number	500H

Setting Item	Set Value
Other node IP address	FFFFFFFFH
Other node port number	FFFFH
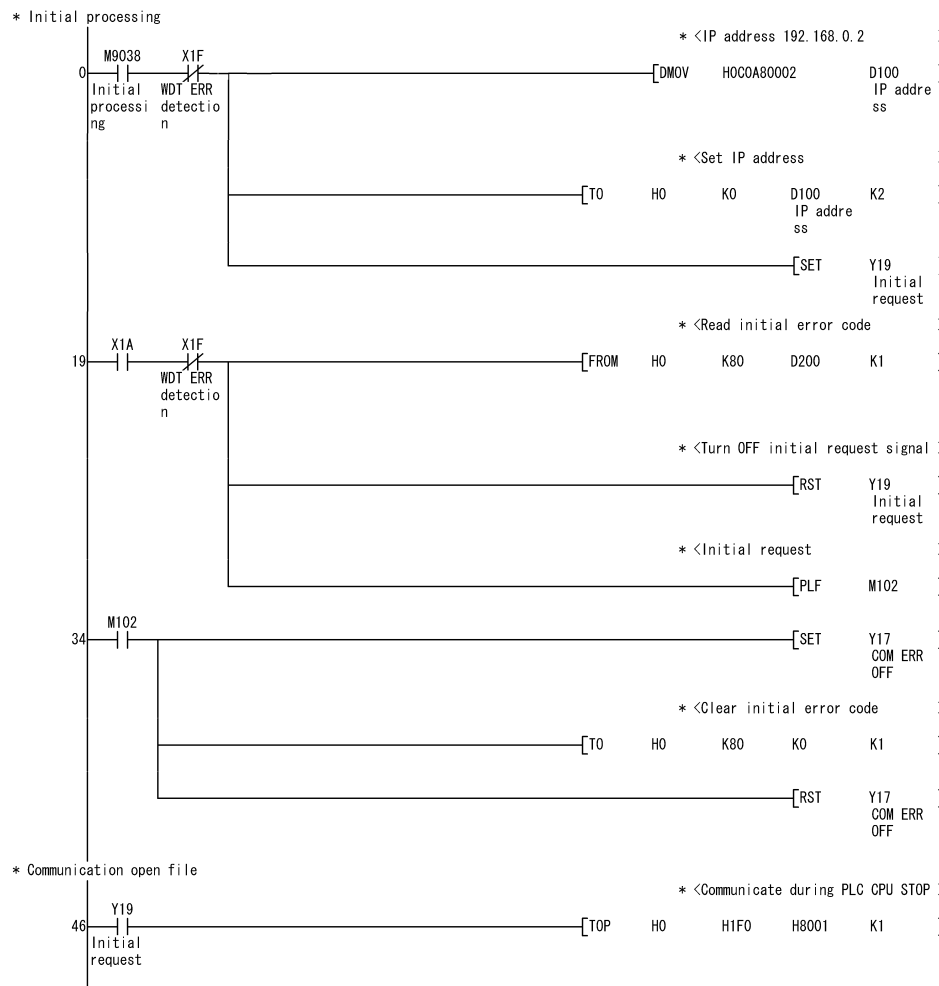

```
* Initial processing
                                                                    * <IP address 192.168.0.2         >
       M9038    X1F
    0 ─┤├──────┤/├───────────────────────────────[DMOV    H0C0A80002        D100        ]
     Initial  WDT ERR                                                       IP addre
     processi detectio                                                      ss
     ng       n
                                                                    * <Set IP address                 >

                           ────────────────────────[TO    H0      K0        D100        K2  ]
                                                                            IP addre
                                                                            ss
                                                                    ─[SET    Y19         ]
                                                                            Initial
                                                                            request
                                                                    * <Read initial error code        >
       X1A      X1F
   19 ─┤├──────┤/├───────────────────────────────[FROM    H0      K80       D200        K1  ]
            WDT ERR
            detectio
            n
                                                                    * <Turn OFF initial request signal >

                                                                    ─[RST    Y19         ]
                                                                            Initial
                                                                            request
                                                                    * <Initial request                >

                                                                    ─[PLF    M102        ]
       M102
   34 ─┤├────────────────────────────────────────────────────────[SET    Y17         ]
                                                                            COM ERR
                                                                            OFF
                                                                    * <Clear initial error code        >

                           ──────────────────────────[TO    H0    K80       K0          K1  ]

                                                                    ─[RST    Y17         ]
                                                                            COM ERR
                                                                            OFF
* Communication open file
                                                                    * <Communicate during PLC CPU STOP >
       Y19
   46 ─┤├────────────────────────────────────────[TOP    H0      H1F0      H8001       K1  ]
     Initial
     request
```

↓

(To the next page)

POINT

This sample sequence program is installed into the following folders after installation of MX Component.

[User-specified folder]-[Act]-[Sample]-[Gppw]-[E71_udp]

(From the preceding page)

↓

```
                                                    * <Communication method set UDP/IP >
     X10    X19
56 ──┤/├────┤├──┬─────────────────────────[MOVP    H100      D110        ]
                │                                    Setting
                │                                    use purp
                │                                    ose
                │
                │
                ├─────────────────────[TOP    H0    K16       D110    K1  ]
                │                                    Setting
                │                                    use purp
                │                                    ose
                │
                │                              * <Module port number 500H(1280)  >
                │
                ├─────────────────────────[MOVP    H500      D111        ]
                │                                    E71 port
                │                                    number
                │
                │                              * <Setting simultaneous broadcast  >
                │
                ├─────────────────────[DMOVP    HOFFFFFFFF    D112        ]
                │                                    Other no
                │                                    de IP ad
                │                                    dress
                │
                │                              * <Setting simultaneous broadcast  >
                │
                ├─────────────────────────[MOVP    HOFFFF    D114        ]
                │                                    Other no
                │                                    de port
                │                                    number
                │
                │
                ├─────────────────────[TOP    H0    K24       D111    K4  ]
                │                                    E71 port
                │                                    number
                │
                │
                └─────────────────────────────────[SET    Y8              ]
                                                    Open req
                                                    uest No.
                                                    1

99 ──────────────────────────────────────────────[END              ]
```
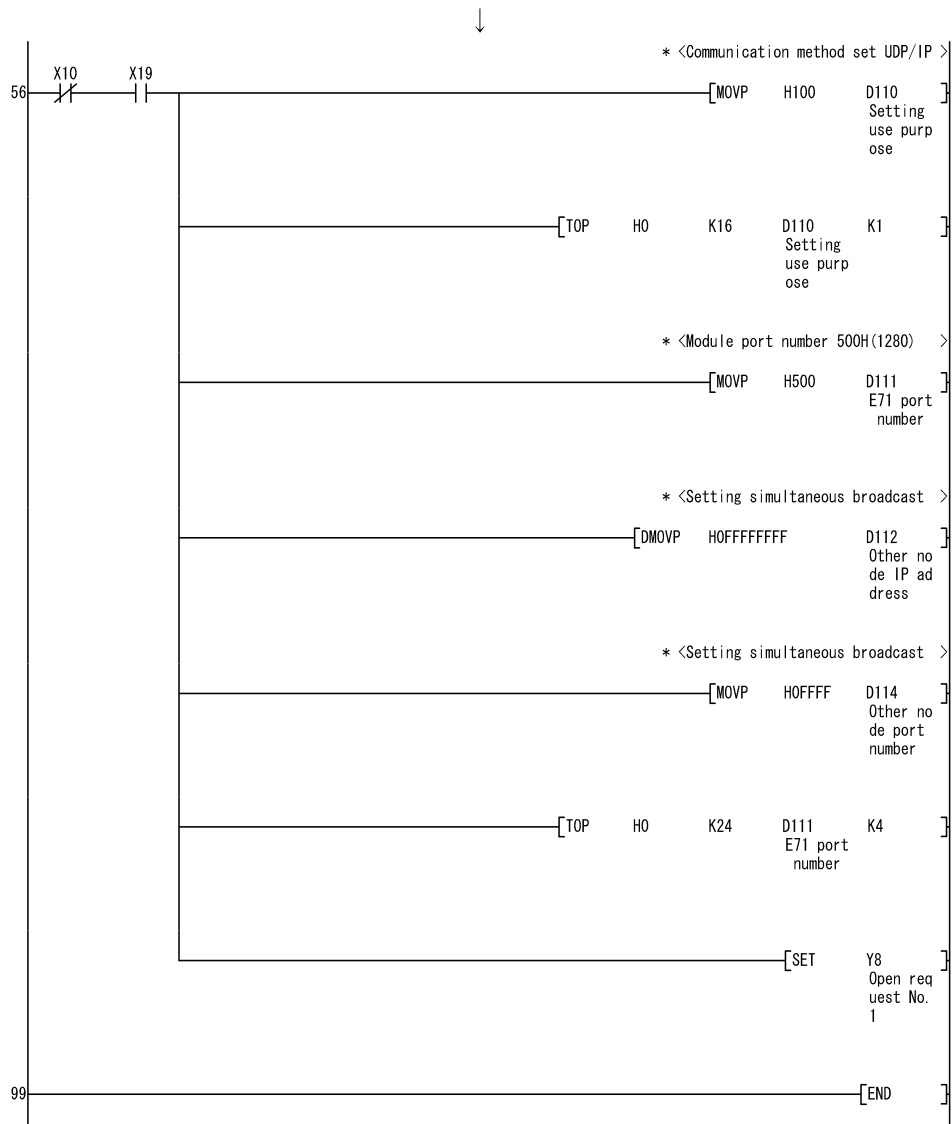
In the communications enabled status, the E71's RUN LED is lit and the RDY LED flickers.

(4) Making routing parameter setting

(a) Q series-compatible E71

Set the routing parameters on the Ethernet parameter setting screen of GX Developer.

For the concept of the routing parameters, refer to "Appendix 1 Concept of Routing Parameters".

CPU to Be Set	Setting Screen Example
CPU1	<table><tr><th></th><th>Target networkNo.</th><th>Relay networkNo.</th><th>Relay StationNo.</th><th>Via StationNo.</th></tr><tr><td>1</td><td>1</td><td>2</td><td>2</td><td></td></tr><tr><td>2</td><td>2</td><td>1</td><td>1</td><td></td></tr><tr><td>3</td><td></td><td></td><td></td><td></td></tr></table>
CPU2	<table><tr><th></th><th>Target networkNo.</th><th>Relay networkNo.</th><th>Relay StationNo.</th><th>Via StationNo.</th></tr><tr><td>1</td><td>1</td><td>2</td><td>2</td><td></td></tr><tr><td>2</td><td></td><td></td><td></td><td></td></tr></table>

(b) QE71

Set the routing parameters on the Ethernet parameter setting screen of GX Developer.

For the concept of the routing parameters, refer to "Appendix 1 Concept of Routing Parameters".

CPU to Be Set	Setting Screen Example
CPU1	<table><tr><th></th><th>Target networkNo.</th><th>Relay networkNo.</th><th>Relay StationNo.</th><th>Via StationNo.</th></tr><tr><td>1</td><td>1</td><td>2</td><td>2</td><td></td></tr><tr><td>2</td><td>2</td><td>1</td><td>1</td><td></td></tr><tr><td>3</td><td></td><td></td><td></td><td></td></tr></table>
CPU2	<table><tr><th></th><th>Target networkNo.</th><th>Relay networkNo.</th><th>Relay StationNo.</th><th>Via StationNo.</th></tr><tr><td>1</td><td>1</td><td>2</td><td>2</td><td></td></tr><tr><td>2</td><td></td><td></td><td></td><td></td></tr></table>

(5) Making communications check

After completion of preparations for Ethernet communication, execute ping in the MS-DOS mode to check connection before starting communications on MX Component.

When normal
C:\>ping 192.168.0.2

Reply from 192.168.0.2:bytes=32 time<10ms TTL=32

When abnormal

C:\>ping 192.168.0.2

Request timed out.

If ping does not pass through, check module connections and Windows® side IP address and other settings.

(6)   Setting the logical station number (Setting on communication setting wizard)

Logical station number setting will be described using the system example for Q series-compatible E71.

1) Start the communication setup utility and choose the communication setting wizard.

2) Type "2" in Logical station number and click the $\boxed{\text{Next>}}$ button.
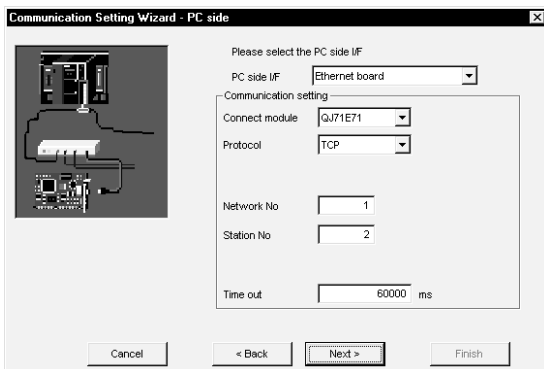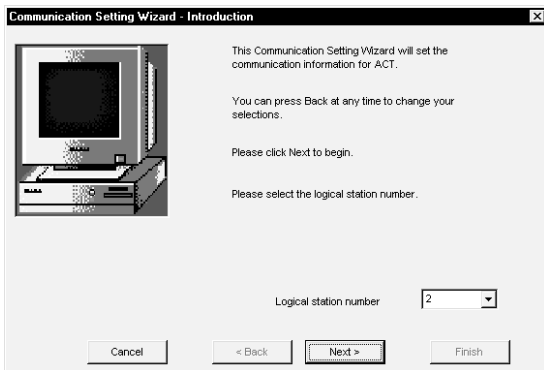
3) Make settings as indicated below and click the $\boxed{\text{Next>}}$ button.

PC side I/F   : Ethernet board
Connect module : QJ71E71
Protocol   : TCP
Network No   : 1
Station No   : 2
Time out   : 60000
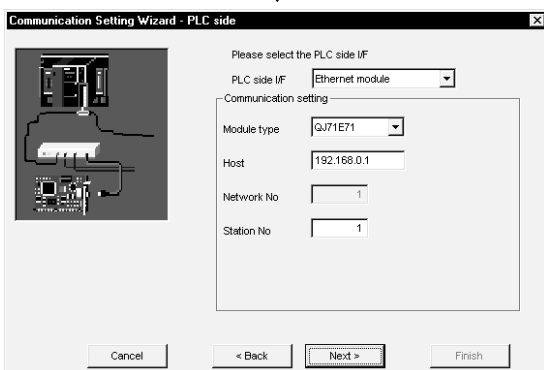
4) Make settings as indicated below and click the $\boxed{\text{Next>}}$ button.

PLC side I/F   : Ethernet module
Module type   : QJ71E71
Host   : 192.168.0.1
Station No   : 1

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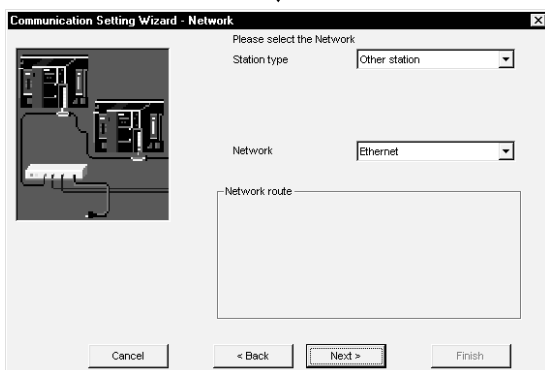
↓

5) Make settings as indicated below and click the $\boxed{\text{Next>}}$ button.

Station type   : Other station
Network   : Ethernet

↓

6) Make settings as indicated below and click the $\boxed{\text{Next>}}$ button.

CPU type   : Q02(H)
Network No   : 2
Station No   : 3
Multiple CPU   : None

↓

7) Enter a comment and click the $\boxed{\text{Finish}}$ button.

↓
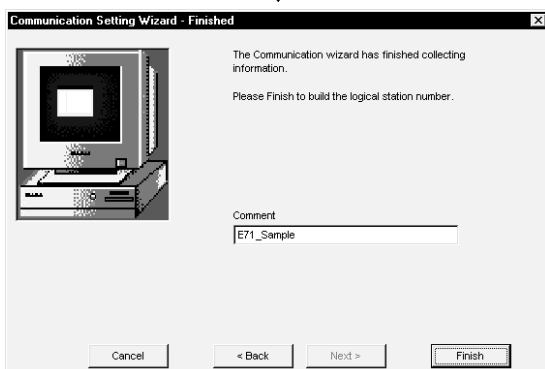
(Registration complete)

(7)   Checking the logical station number settings (Conducting a communication test)

Check whether the computer link communication settings are correct or not, using the logical station number set in (6).
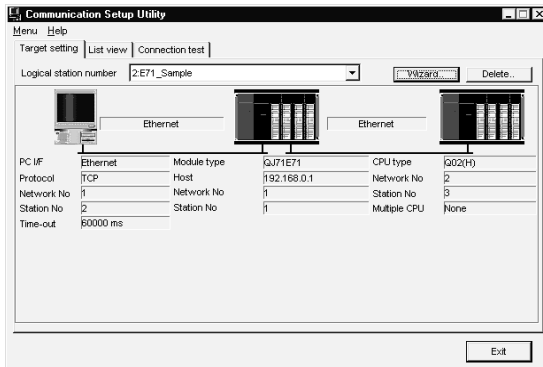
1) Display the "Target setting" tab screen and choose the logical station number "2".
Check whether the logical station number settings are correct or not.

↓
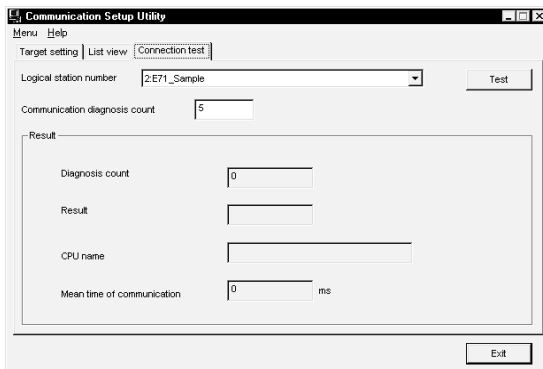
2) Display the "Connection test" tab screen and set the logical station number "2".

↓

3) Click the ⎡Test⎤ button to check that communication is being performed normally.
If an error occurred, check the error code and remove the error. The error code appears in Result. (At normal termination, "0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings are correct.
This logical station number is made applicable by user program creation and PLC monitor utility.
Collect device data, using this logical station number.

6.3 CPU COM Communication

This section provides the CPU COM communication procedure and its setting example using the utility setting type.

6.3.1 Accessing procedure

The procedure for making access to the PLC CPU using CPU COM communication will be explained in the following order.
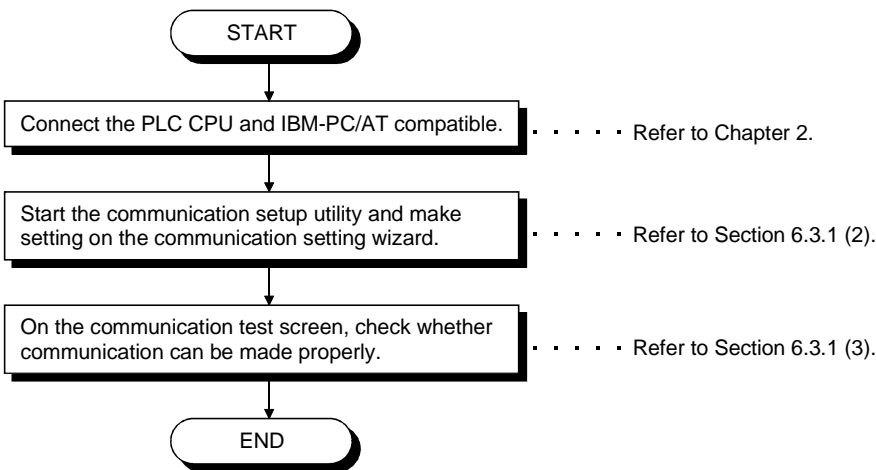
```
                    ┌──────────┐
                    │  START   │
                    └──────────┘
                         │
                         ▼
┌────────────────────────────────────────────┐
│ Connect the PLC CPU and IBM-PC/AT compatible.│ · · · · · Refer to Chapter 2.
└────────────────────────────────────────────┘
                         │
                         ▼
┌────────────────────────────────────────────┐
│ Start the communication setup utility and make │
│ setting on the communication setting wizard. │ · · · · · Refer to Section 6.3.1 (2).
└────────────────────────────────────────────┘
                         │
                         ▼
┌────────────────────────────────────────────┐
│ On the communication test screen, check whether │
│ communication can be made properly. │ · · · · · Refer to Section 6.3.1 (3).
└────────────────────────────────────────────┘
                         │
                         ▼
                    ┌──────────┐
                    │   END    │
                    └──────────┘
```

(1) System example
The following system example is used in this section.

IBM-PC/AT compatible
(MX Component) COM1
is used.

Q02H CPU — Ordinary station (Sta. No.2)

MELSECNET/H (Network No. 5)

Q02H CPU — Ordinary station (Sta. No.5)

Logical station number of "3" is used.
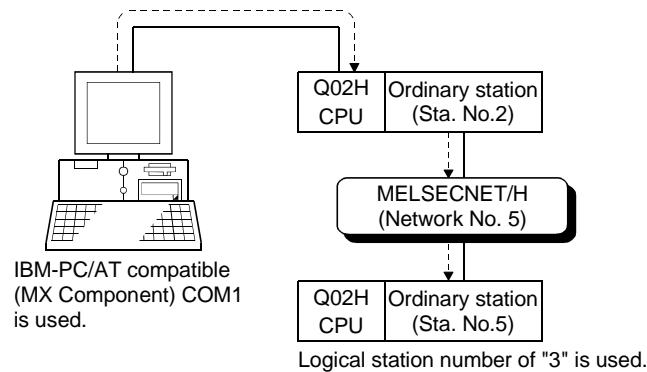
(2)   Setting the logical station number (Setting on communication setting wizard)

Logical station number setting will be described using the system example for (1).

1) Start the communication setup utility and choose the communication setting wizard.

2) Type "3" in Logical station number and click the Next> button.
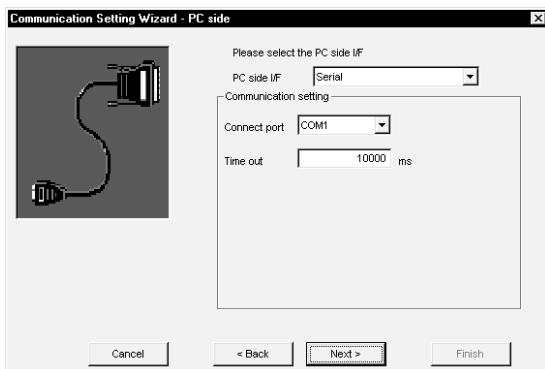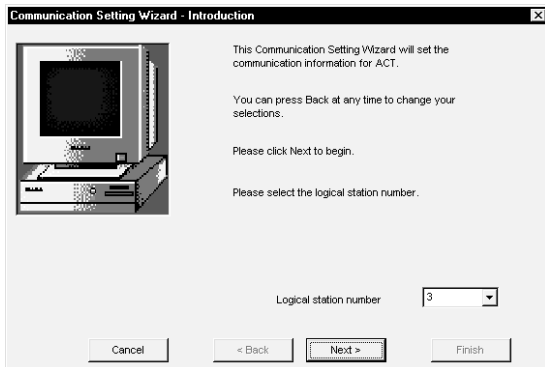
3) Make settings as indicated below and click the Next> button.

PC side I/F   : Serial
Connect port   : COM1
Time out   : 10000
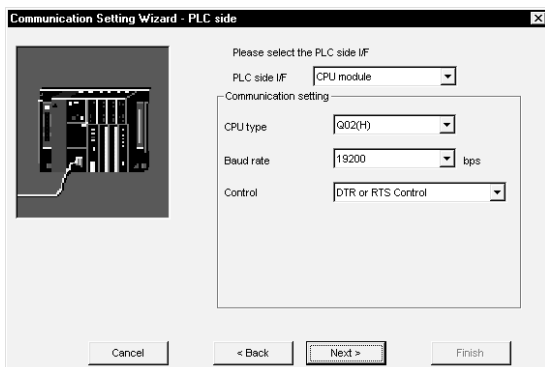
4) Make settings as indicated below and click the Next> button.
PLC side I/F   : CPU module
CPU type   : Q02(H)
Baud rate   : 19200
Control   : DTR or RTS Control
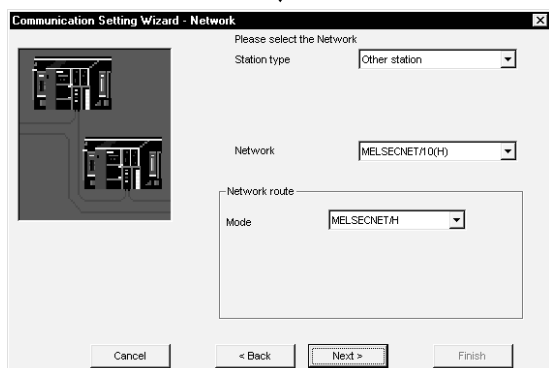
(To the next page)

(From the preceding page)

↓

5) Make settings as indicated below and click the Next> button.

Station type   : Other station
Network   : MELSECNET/10(H)
Mode   : MELSECNET/H

↓

6) Make settings as indicated below and click the Next> button.

CPU type   : Q02(H)
Network No   : 5
Station No   : 5
Multiple CPU   : None
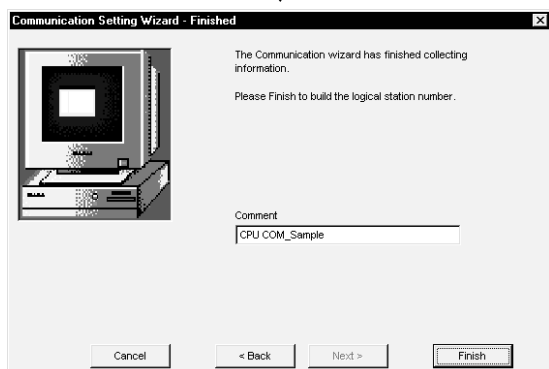
↓

7) Enter a comment and click the Finish button.

↓

(Registration complete)

(3)   Checking the logical station number settings (Conducting a
communication test)
Check whether the CPU COM communication settings are correct or not, using
the logical station number set in (2).
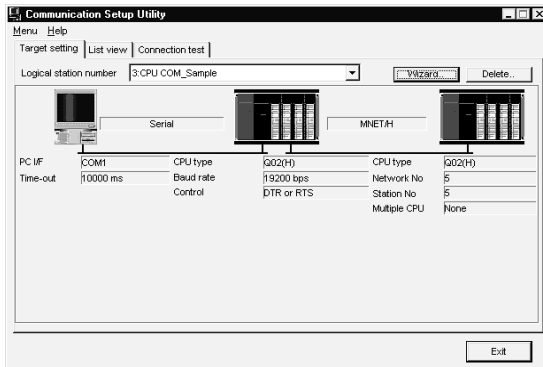
1) Display the "Target setting" tab screen and choose the
logical station number "3".
Check whether the logical station number settings are
correct or not.
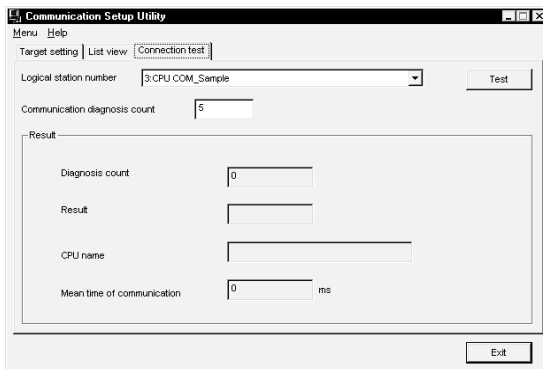
↓

2) Display the "Connection test" tab screen and set the logical
station number "3".

↓

Click!

3) Click the $\boxed{\text{Test}}$ button to check that communication is being
performed normally.
If an error occurs, check the error code and remove the error.
The error code appears in Result. (At normal termination,
"0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical
station number settings are correct.
This logical station number is made applicable by user
program creation and PLC monitor utility.
Collect device data, using this logical station number.

6.4 CPU USB Communication

This section provides the CPU USB communication procedure and its setting example using the utility setting type.

6.4.1 Accessing procedure

The procedure for making access to the PLC CPU using CPU USB communication will be explained in the following order.

```
          ┌─────────────┐
          │    START    │
          └─────────────┘
                 │
┌──────────────────────────────────────────────┐
│ Connect the PLC CPU and IBM-PC/AT compatible. │ · · · · · Refer to Chapter 2.
└──────────────────────────────────────────────┘
                 │
┌──────────────────────────────────────────────────────────┐
│ When using any of the following OSs, install the USB driver.│
│ Microsoft® Windows® 2000 Professional Operating System.  │
│ Microsoft® Windows® XP Professional Operating System.    │ · · · · Refer to Operating Manual
│ Microsoft® Windows® XP Home Edition Operating System.    │            (Startup).
└──────────────────────────────────────────────────────────┘
                 │
┌──────────────────────────────────────────────────┐
│ Start the communication setup utility and make     │
│ setting on the communication setting wizard.       │ · · · · · Refer to Section 6.4.1 (2).
└──────────────────────────────────────────────────┘
                 │
┌──────────────────────────────────────────────────┐
│ On the communication test screen, check whether    │
│ communication can be made properly.                │ · · · · · Refer to Section 6.4.1 (3).
└──────────────────────────────────────────────────┘
                 │
          ┌─────────────┐
          │     END     │
          └─────────────┘
```

(1) System example

The following system example is used in this section.

IBM-PC/AT compatible
(MX Component) USB
is used.

| Q02H CPU | Ordinary station (Sta. No.2) |

MELSECNET/H
(Network No. 1)

| Q02H CPU | Ordinary station (Sta. No.8) |

Logical station number of "4" is used.

(2)   Setting the logical station number (Setting on communication
         setting wizard)
         Logical station number setting will be described using the system example for (1).

1) Start the communication setup utility and choose the
   communication setting wizard.

2) Type "4" in Logical station number and click the Next>
   button.
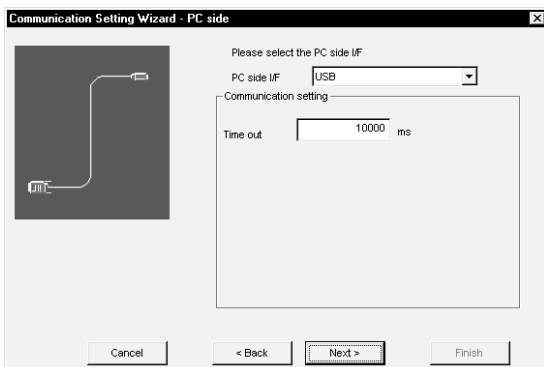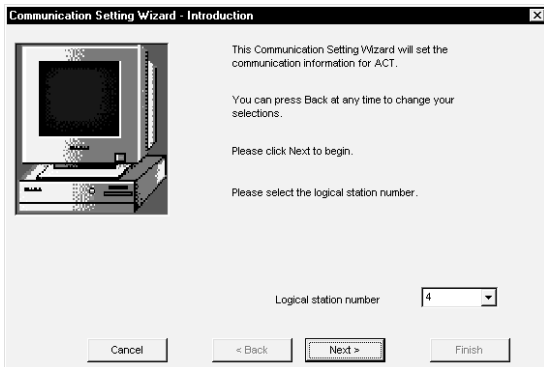
3) Make settings as indicated below and click the Next>
   button.

   PC side I/F   : USB
   Time out   : 10000
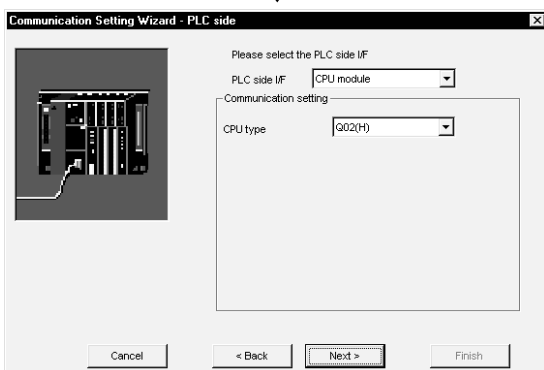
4) Make settings as indicated below and click the Next>
   button.
   PLC side I/F   : CPU module
   CPU type   : Q02(H)

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(From the preceding page)

↓

5) Make settings as indicated below and click the Next> button.

Station type : Other station
Network : MELSECNET/10(H)
Mode : MELSECNET/H

↓

6) Make settings as indicated below and click the Next> button.

CPU type : Q02(H)
Network No : 1
Station No : 8
Multiple CPU : None
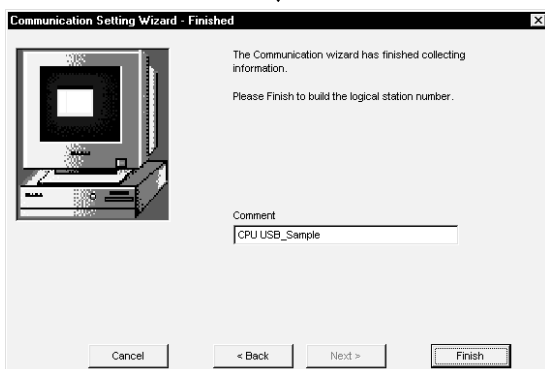
↓

7) Enter a comment and click the Finish button.

↓

(Registration complete)

(3) Checking the logical station number settings (Conducting a communication test)

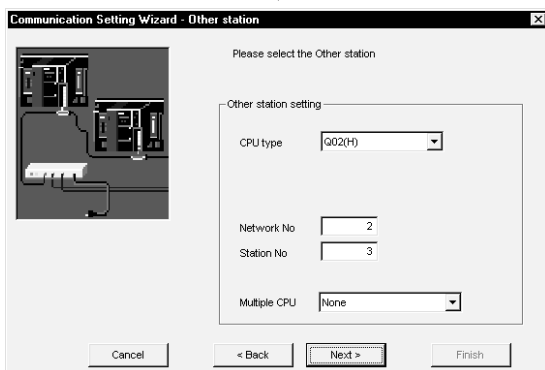Check whether the CPU USB communication settings are correct or not, using the logical station number set in (2).
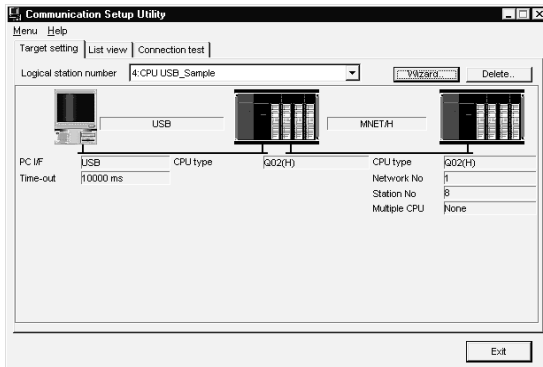
1) Display the "Target setting" tab screen and choose the logical station number "4".
Check whether the logical station number settings are correct or not.
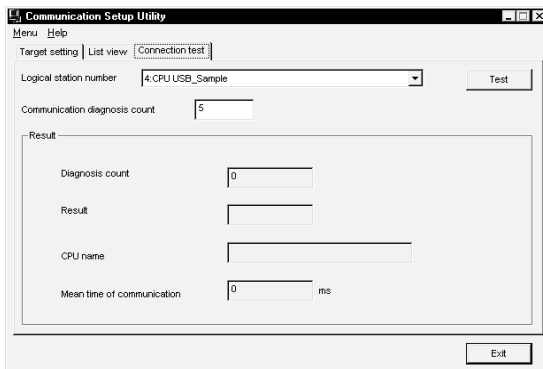
↓

2) Display the "Connection test" tab screen and set the logical station number "4".

↓

←—Click!

3) Click the [Test] button to check that communication is being performed normally.
If an error occurred, check the error code and remove the error. The error code appears in Result. (At normal termination, "0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings are correct.
This logical station number is made applicable by user program creation and PLC monitor utility.
Collect device data, using this logical station number.

6.5 MELSECNET/10 Communication

This section provides the MELSECNET/10 communication procedure and its setting example using the utility setting type.

6.5.1 Accessing procedure

The procedure for making access to the PLC CPU using MELSECNET/10 communication will be explained in the following order.

```
          ┌─────────────┐
          │    START    │
          └──────┬──────┘
                 │
┌────────────────────────────────────┐
│ Set the MELSECNET/10 board.        │
└────────────────┬───────────────────┘
                 │
┌────────────────────────────────────┐
│ Connect the IBM-PC/AT compatible to│ · · · · Refer to Chapter 2 and Section 6.5.1 (2).
│ the MELSECNET/10.                  │
└────────────────┬───────────────────┘
                 │
┌────────────────────────────────────┐
│ Start the communication setup      │ · · · · Refer to Section 6.5.1 (3).
│ utility and make setting on the    │
│ communication setting wizard.      │
└────────────────┬───────────────────┘
                 │
┌────────────────────────────────────┐
│ On the communication test screen,  │ · · · · Refer to Section 6.5.1 (4).
│ check whether communication can be │
│ made properly.                     │
└────────────────┬───────────────────┘
                 │
          ┌─────────────┐
          │     END     │
          └─────────────┘
```

(1) System example

The following system example is used in this section.

IBM-PC/AT compatible (MX Component)
First MELSECNET/10 board is used.

Ordinary station
Station number 1

Numeral within □ indicates station number.

Access is made to A2USHCPU-S1 at ordinary station (station number: 2) on network No. 2.

Logical station number of "5" is used.

(2)   Checking the MELSECNET/10 board
Check whether the IBM-PC/AT compatible is connected properly to the
MELSECNET/10.

1) Click [Start]-[Program]-[Melsec]-[MELSECNET10 Utility] to
start the MELSECNET/10 utility.
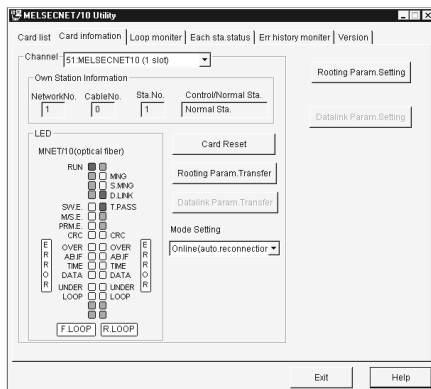
2) Click the "Card information" tab and set the channel to
"51:MELSECNET10 (1 slot)".
After that, set the mode to "On-line automatic return" and
click the ⎿Routing Param. Setting⏌ button.

↓
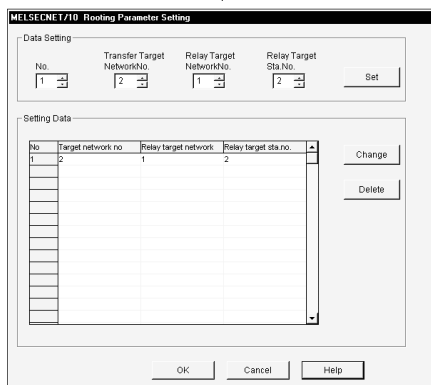
3) Set the routing parameters and click the ⎿Set⏌ button.

Target network No.   : 2
Relay target network   : 1
Relay target Sta. No.   : 2

After that, click the ⎿OK⏌ button to close the dialog box.
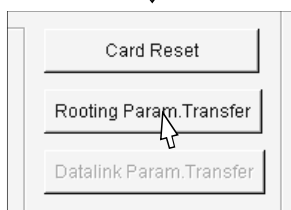
↓

4) Click the ⎿Routing Param. Transfer⏌ button to transfer the
routing parameters to the MELSECNET/10 board.

↓

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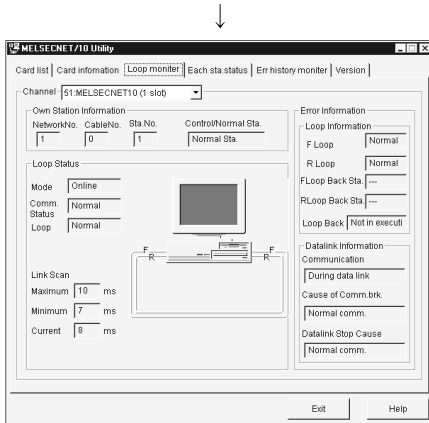
(From the preceding page)

↓

5) Click the "Loop monitor" tab and make sure that the loop is normal.

↓

(Check complete)

6) Click the Exit button to exit from the utility.

(3)   Setting the logical station number (Setting on communication setting wizard)

Logical station number setting will be described using the system example for (1).

1) Start the communication setup utility and choose the communication setting wizard.

2) Type "5" in Logical station number and click the Next> button.
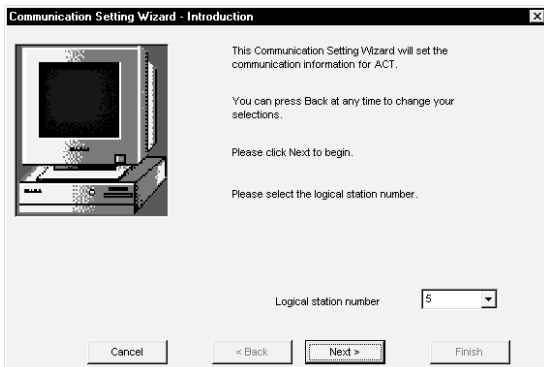
3) Make settings as indicated below and click the Next> button.

PC side I/F   : MELSECNET/10 board
Board No   : 1st module
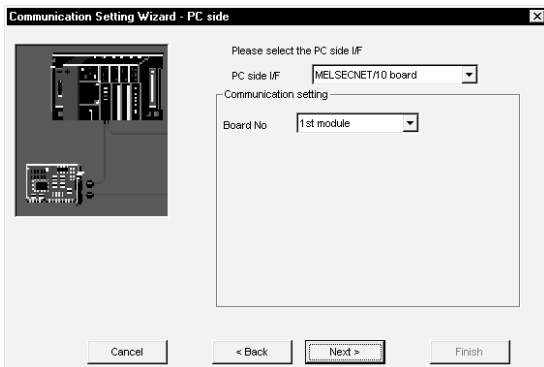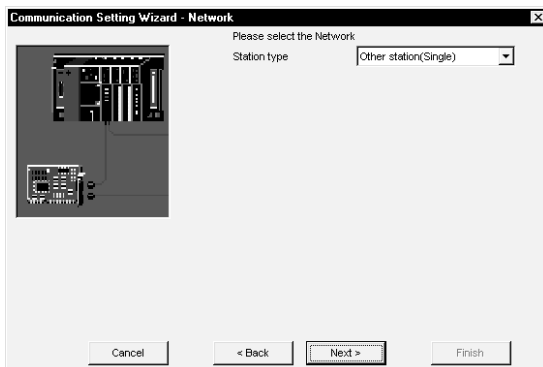
↓

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↓

4) Make settings as indicated below and click the Next> button.

    Station type   : Other station(Single)

↓
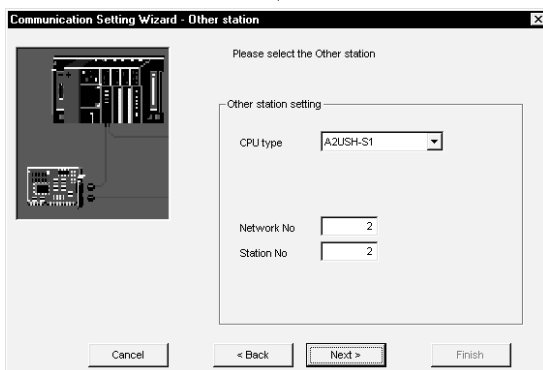
5) Make settings as indicated below and click the Next> button.

    CPU type   : A2USH-S1
    Network No   : 2
    Station No   : 2
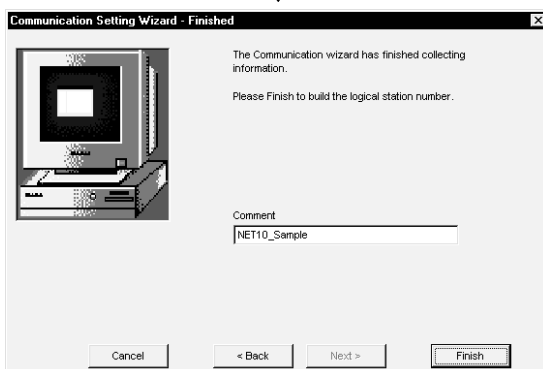
↓

6) Enter a comment and click the Finish button.

↓

(Registration complete)

(4)   Checking the logical station number settings (Conducting a communication test)

Check whether the MELSECNET/10 communication settings are correct or not, using the logical station number set in (3).
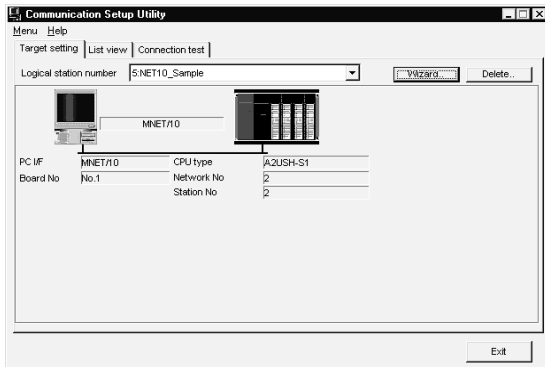
1) Display the "Target setting" tab screen and choose the logical station number "5".
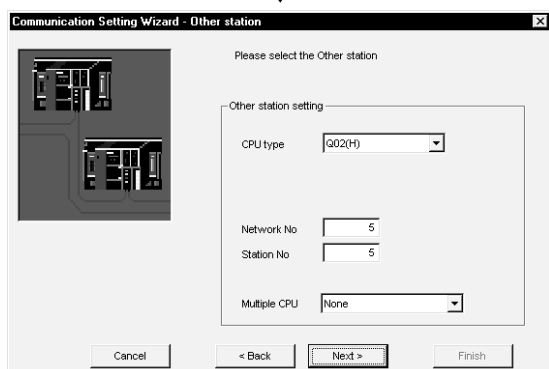Check whether the logical station number settings are correct or not.
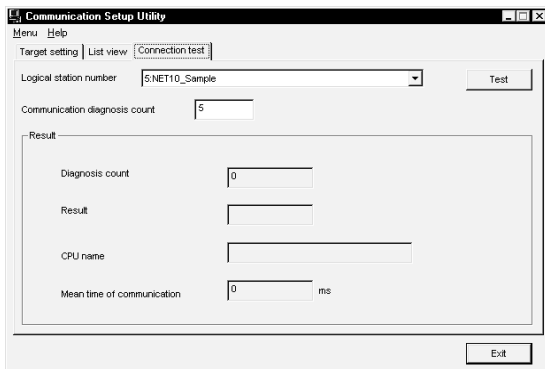
↓

2) Display the "Connection test" tab screen and set the logical station number "5".

↓

←Click!

3) Click the Test button to check that communication is being performed normally.
If an error occurred, check the error code and remove the error. The error code appears in Result. (At normal termination, "0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings are correct.
This logical station number is made applicable by user program creation and PLC monitor utility.
Collect device data, using this logical station number.

6.6 CC-Link Communication

This section provides the CC-Link communication procedure and its setting example using the utility setting type.

6.6.1 Accessing procedure

The procedure for making access to the PLC CPU using CC-Link communication will be explained in the following order.

```
                    ┌─────────────┐
                    │    START    │
                    └─────────────┘
                           │
    ┌──────────────────────────────────────────┐
    │ Set the CC-Link board.                    │
    └──────────────────────────────────────────┘
                           │
    ┌──────────────────────────────────────────┐
    │ Connect the IBM-PC/AT compatible to CC-Link. │ · · · · · Refer to Chapter 2
    └──────────────────────────────────────────┘             and Section 6.6.1 (2).
                           │
    ┌──────────────────────────────────────────┐
    │ Start the communication setup utility and make │ · · · · · Refer to Section 6.6.1 (3).
    │ setting on the communication setting wizard.   │
    └──────────────────────────────────────────┘
                           │
    ┌──────────────────────────────────────────┐
    │ On the communication test screen, check whether │ · · · · · Refer to Section 6.6.1 (4).
    │ communication can be made properly.             │
    └──────────────────────────────────────────┘
                           │
                    ┌─────────────┐
                    │     END     │
                    └─────────────┘
```
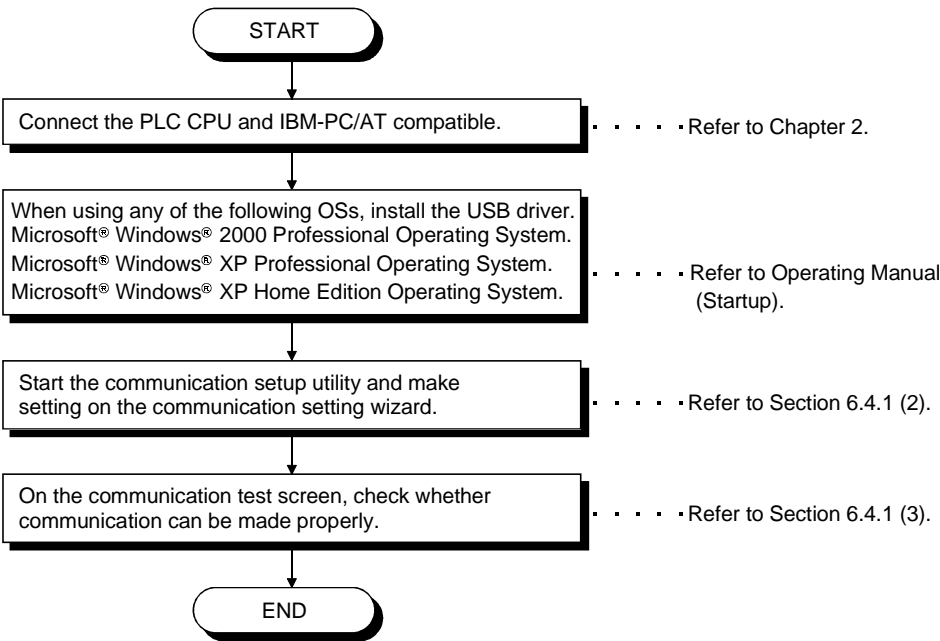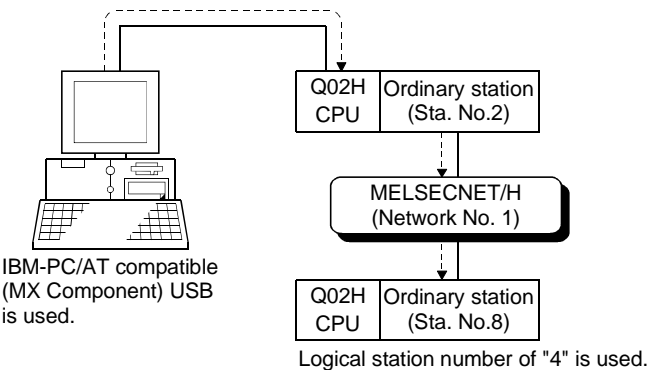
(1)   System example

The following system example is used in this section.

```
Local station
Station number 1
Number of occupied
stations 4                  ┌─────────────────────────────┐
                            │ Transmission speed: 10Mbps  │
                    ┌───┐                           ┌──────────┐
                    │   │                           │ CC-Link  │
                    │   │                           └──────────┘
                    └───┘                     ┌─────────┬──────────────┐
                  [keyboard]                  │ Q02H    │ Local station │
                                              │ CPU     │ (Sta. No.5)   │
IBM-PC/AT compatible                          └─────────┴──────────────┘
(MX Component) First            Logical station number of "6" is used.
CC-Link board is used.
```

(2)   Checking the CC-Link board
Check whether the IBM-PC/AT compatible is connected properly to CC-Link.

1) Click [Start]-[Program]-[Melsec]-[CC-Link Board Utility] to start the CC-Link utility.
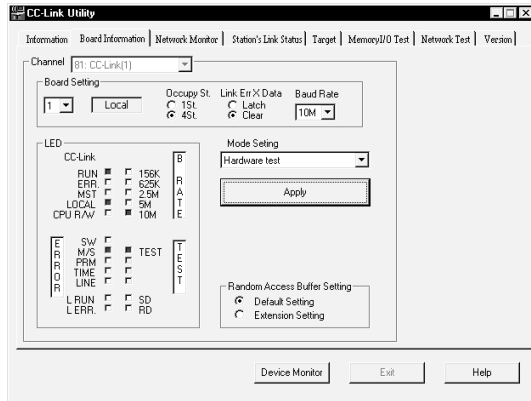
2) Click the "Board Information" tab and set the channel to "81:CC-Link (1)", and set the own station.

Station No.	: 1
Station type	: Local station
Occupy St.	: 4 St.
Link Err X Data	: Clear
Baud Rate	: 10M

Set the mode to "Hardware test", click the |Apply| button, and check whether the CC-Link card is normal or not.

↓
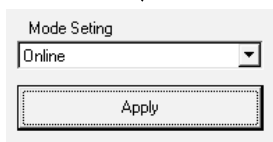
3) Set the mode to "Online" and click the |Apply| button.

↓
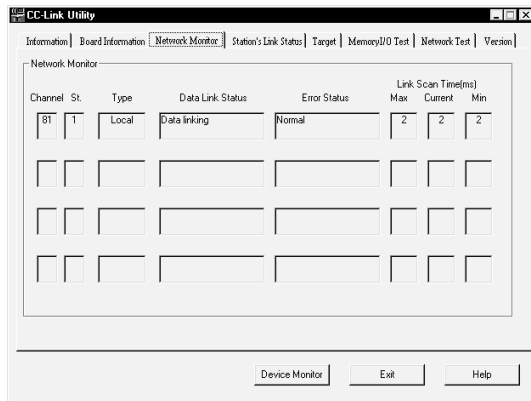
4) Click the "Network Monitor" tab and make sure that the loop of the own station is normal.

↓

(Check complete)

5) Click the |Exit| button to exit from the utility.

(3)   Setting the logical station number (Setting on communication setting wizard)

Logical station number setting will be described using the system example for (1).

1) Start the communication setup utility and choose the communication setting wizard.

2) Type "6" in Logical station number and click the Next> button.
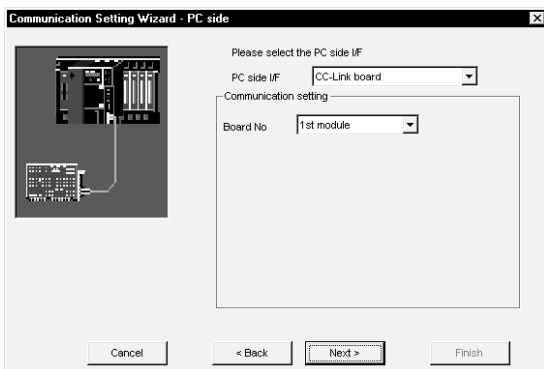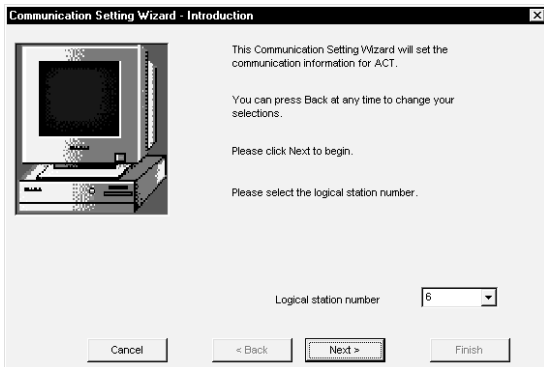
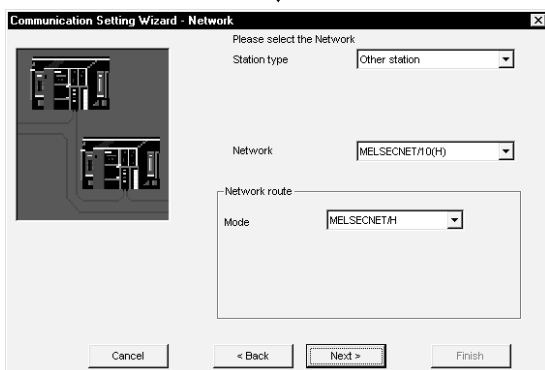3) Make settings as indicated below and click the Next> button.

    PC side I/F   : CC-Link board
    Board No   : 1st module
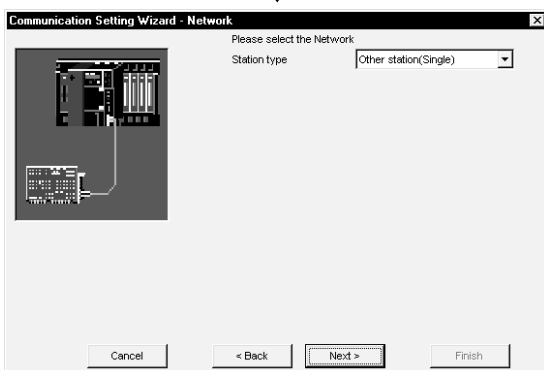
4) Make settings as indicated below and click the Next> button.

    Station type   : Other station(Single)
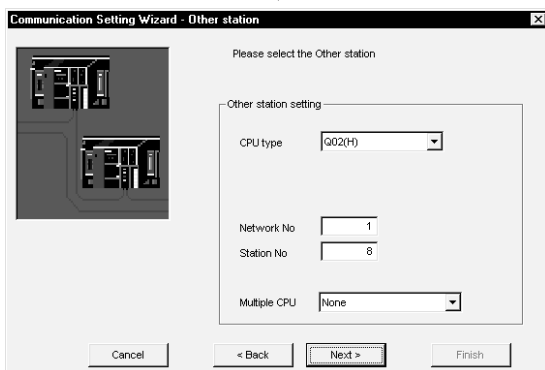
(To the next page)

(From the preceding page)

↓
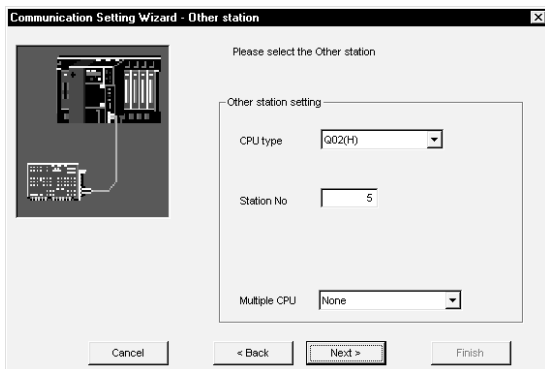
5) Make settings as indicated below and click the Next> button.

CPU type   : Q02(H)
Station No   : 5
Multiple CPU : None
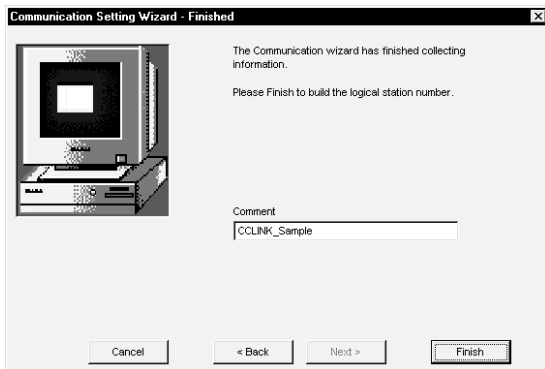
↓

6) Enter a comment and click the Finish button.

↓

(Registration complete)

(4) Checking the logical station number settings (Conducting a communication test)
Check whether the CC-Link communication settings are correct or not, using the logical station number set in (3).
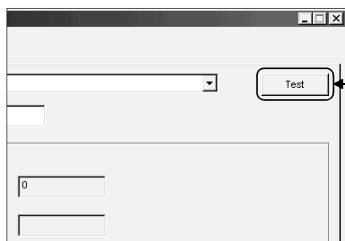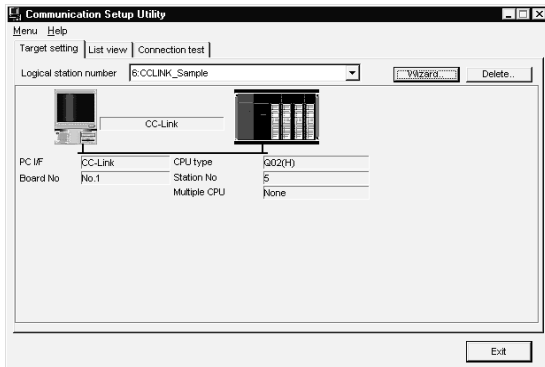
1) Display the "Target setting" tab screen and choose the logical station number "6".
Check whether the logical station number settings are correct or not.

↓
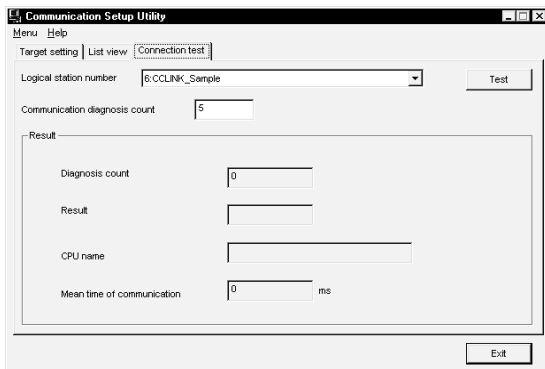
2) Display the "Connection test" tab screen and set the logical station number "6".

↓

3) Click the Test button to check that communication is being performed normally.
If an error occurred, check the error code and remove the error. The error code appears in Result. (At normal termination, "0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings are correct.
This logical station number is made applicable by user program creation and PLC monitor utility.
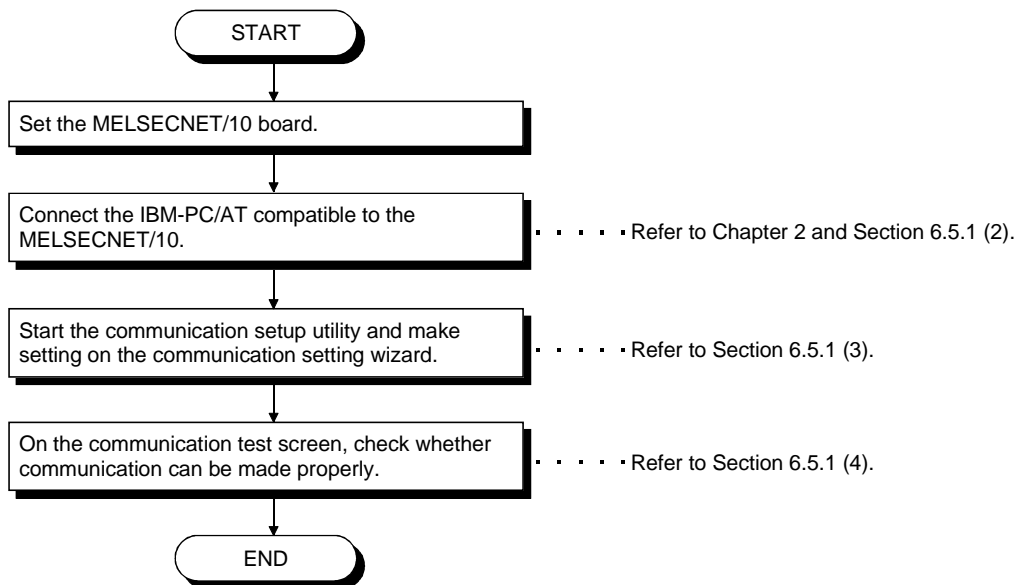Collect device data, using this logical station number.

6.7 CC-Link G4 Communication

This section provides the CC-Link G4 communication procedure and its setting example using the utility setting type.

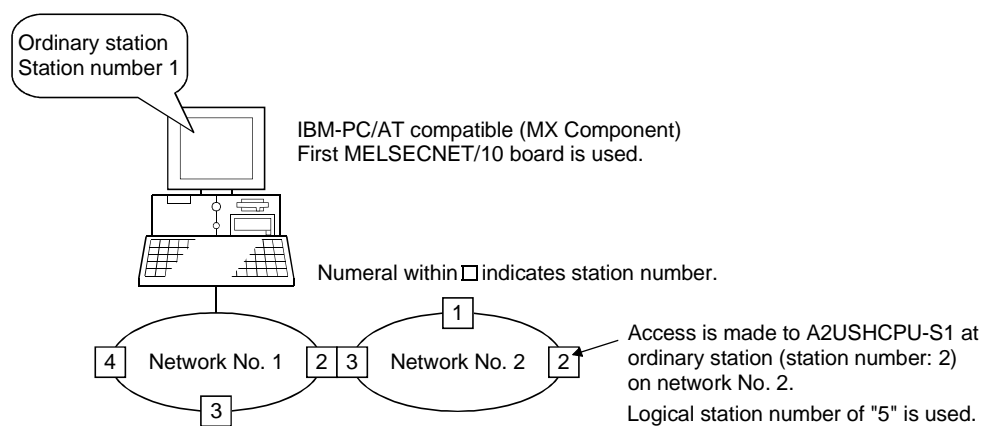## 6.7.1 Switch settings of CC-Link G4 module

This section gives the switch settings of the CC-Link G4 module for use of MX Component in the following system configuration.
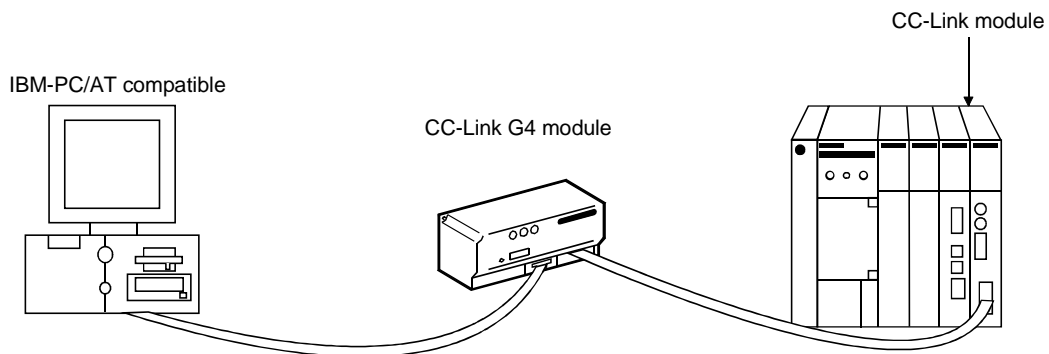
CC-Link module

IBM-PC/AT compatible

CC-Link G4 module

> **POINT**
>
> When using MX Component, the settings other than "As set by user" in the tables are fixed as given in the tables.

(1) AJ65BT-G4

Switch (Switch Number)		Setting	
		In QnA mode	In A mode
Station number setting switches		As set by user	
Data link transmission speed setting switch		As set by user (match to the transmission speed of the CC-Link module)	
Operation setting DIP switches	Operation mode setting (SW1)	ON (QnA mode)	OFF (A mode)
	Inter-peripheral transmission speed setting (SW2, SW3)	As set by user (Match to the baudrate of MX Component)	9600bps SW / Setting SW2 / OFF SW3 / OFF
	Parity bit yes/no setting (SW4, SW5)	SW / Setting SW4 / OFF SW5 / OFF	SW / Setting SW4 / OFF SW5 / OFF
	— (SW6)	OFF	OFF
	— (SW7)	OFF	OFF
	Test mode setting (SW8)	OFF (online mode)	OFF (online mode)

(2) AJ65BT-G4-S3

Switch (Switch Number)		Setting		
		In Q mode	In QnA mode	In A mode
Station number setting switches		As set by user		
Data link transmission speed setting switch		As set by user (match to the transmission speed of the CC-Link module)		
Operation setting DIP switches	Operation mode setting (SW1, SW6)	SW / Setting SW1 / OFF SW6 / ON	SW / Setting SW1 / ON SW6 / OFF	SW / Setting SW1 / OFF SW6 / OFF
	Inter-peripheral transmission speed setting (SW2, SW3)	Setting need not be made (Automatic setting)	As set by user (Match to the baudrate of MX Component)	SW / Setting SW2 / OFF SW3 / OFF
	Parity bit yes/no setting (SW4, SW5)	SW / Setting SW4 / OFF SW5 / OFF	SW / Setting SW4 / OFF SW5 / OFF	SW / Setting SW4 / OFF SW5 / OFF
	— (SW7)	OFF	OFF	OFF
	Test mode setting (SW8)	OFF (online mode)	OFF (online mode)	OFF (online mode)

6.7.2 Accessing procedure

The procedure for making access to the PLC CPU using CC-Link G4 communication will be explained in the following order.

```
                    ( START )
                        │
                        ▼
┌─────────────────────────────────────┐
│ Set the operation setting DIP        │ · · · · Refer to Section 6.7.2 (2).
│ switches of the CC-Link G4 module.   │
└─────────────────────────────────────┘
                        │
                        ▼
┌─────────────────────────────────────┐
│ Connect the CC-Link G4 module to     │ · · · · Refer to Section 6.7.2 (3).
│ the CC-Link module.                  │
└─────────────────────────────────────┘
                        │
                        ▼
┌─────────────────────────────────────┐
│ Connect the IBM-PC/AT compatible to  │ · · · · Refer to Chapter 2.
│ the CC-Link G4 module.               │
└─────────────────────────────────────┘
                        │
                        ▼
┌─────────────────────────────────────┐
│ Set the network parameters.          │ · · · · Refer to Section 6.7.2(4).
└─────────────────────────────────────┘
                        │
                        ▼
┌─────────────────────────────────────┐
│ Start the communication setup        │ · · · · Refer to Section 6.7.2(5).
│ utility and make setting on the      │
│ communication setting wizard.        │
└─────────────────────────────────────┘
                        │
                        ▼
┌─────────────────────────────────────┐
│ On the communication test screen,    │ · · · · Refer to Section 6.7.2 (6).
│ check whether communication can be   │
│ made properly.                       │
└─────────────────────────────────────┘
                        │
                        ▼
                    ( END )
```

(1) System example

The following system example is used in this section.

Transmission speed: 19200bps

Transmission speed: 10Mbps

CC-Link

IBM-PC/AT compatible
(MX Component) COM1
is used.

CC-Link G4 module
(QnA mode)
Station number: 1

Q2A CPU | Master station (Sta. No.0)

Logical station number of "7" is used.

(2) Making switch settings of the CC-Link G4 module

The switch settings of the CC-Link G4 module are indicated below.

Switch (Switch Number)		Setting
Station number setting switches		01 (station number 1)
Data link transmission speed setting switch		4 (10Mbps)
Operation setting DIP switches	Operation mode setting (SW1)	ON (QnA mode)
	Inter-peripheral transmission speed setting (SW2, SW3)	19200bps
		<table><tr><td>SW</td><td>Setting</td></tr><tr><td>SW2</td><td>ON</td></tr><tr><td>SW3</td><td>OFF</td></tr></table>
	Parity bit yes/no setting (SW4, SW5)	<table><tr><td>SW</td><td>Setting</td></tr><tr><td>SW4</td><td>OFF</td></tr><tr><td>SW5</td><td>OFF</td></tr></table>
	— (SW6) ∗1	OFF
	— (SW7)	OFF
	Test mode setting (SW8)	OFF (online mode)

∗1: This switch acts as the operation mode setting switch on the AJ65BT-G4-S3.

(3) Wiring the CC-Link G4 module

The diagram of wiring the CC-Link G4 module to the CC-Link module is shown below.
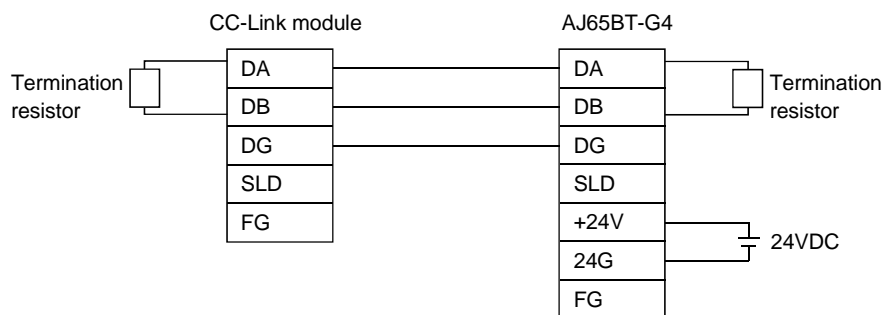
(4)   Setting the network parameters
Parameter setting may either be made from the network parameter "CC-Link setting screen" of GX Developer or from a sequence program.

POINT
When using the CC-Link G4 module in the A mode, set the parameters in accordance with "(b) Making parameter setting in sequence program".

(a)   Making parameter setting on CC-Link setting screen
Set the first I/O No., type, total number of modules connected, and station information.
Set other setting items as required.

<CC-Link parameter setting screen>

No. of boards in module   1   Boards   Blank: no setting   0 boards: Set by the sequence program.

	1	2	3	4
Start I/O No.	0000			
Type	Master station			
All connect count	1			
Remote input(RX)				
Remote output(RY)				
Remote register(RWr)				
Remote register(RWw)				
Special relay(SB)				
Special register(SW)				
Retry count	3			
Automatic reconnection station count	1			
Wait master station No.	0			
PLC down select	Stop			
Scan mode setting	Asynchronously			
Delay information setting	0			
Station information setting	Station information			

<Station information setting screen>

CC-Link station information. Module 1

StationNo.	Station type	Exclusive station count	Reserve/invalid station select	Intelligent buffer select(word)		
				Send	Receive	Automatic
1/ 1	Intelligent device station	Exclusive station 1	No setting	64	64	128

Default   Check   End   Cancel

After setting the CC-Link parameters, write them to the PLC CPU.

(b)   Making parameter setting in sequence program
The parameter setting items for data link and the sequence program example are given below.

<Parameter setting items>

Address	Item	Description	Set Value
1H	Number of connected modules	Set the number of modules on the remote/local stations connected.	1H
20H	Station information	AJ65BT-G4(-S3)	2101H
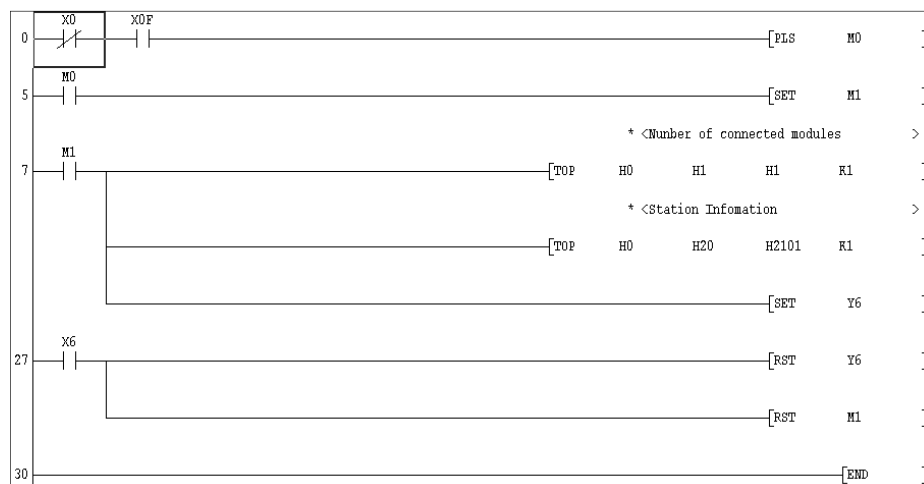
<Sequence program>

POINT

This sample sequence program is installed into the following folders after installation of MX Component.
[User-specified folder]-[Act]-[Sample]-[Gppw]-[Ccg4a]

(5)   Setting the logical station number (Setting on communication setting wizard)

Logical station number setting will be described using the system example for (1).

1) Start the communication setup utility and choose the communication setting wizard.

2) Type "7" in Logical station number and click the Next> button.
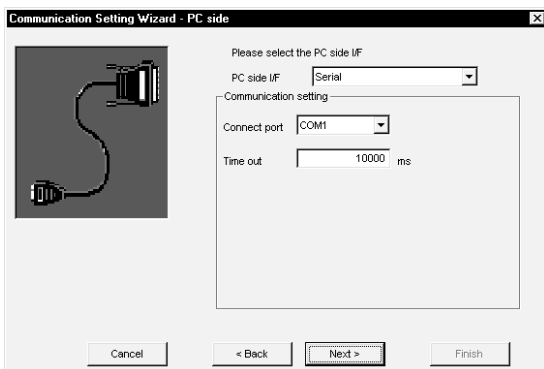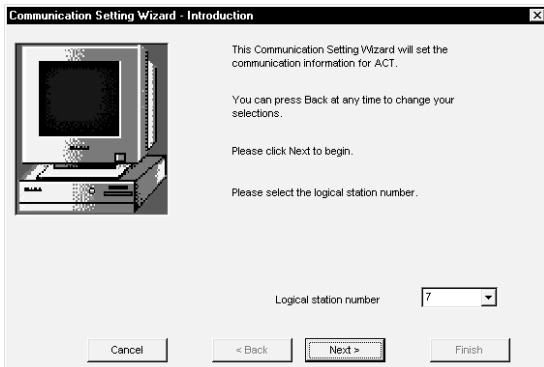
3) Make settings as indicated below and click the Next> button.

PC side I/F   : Serial
Connect port   : COM1
Time out   : 10000

4) Make settings as indicated below and click the Next> button.

PLC side I/F   : G4 module
Mode   : QnA
Baud rate   : 19200
Control   : DTR or RTS Control
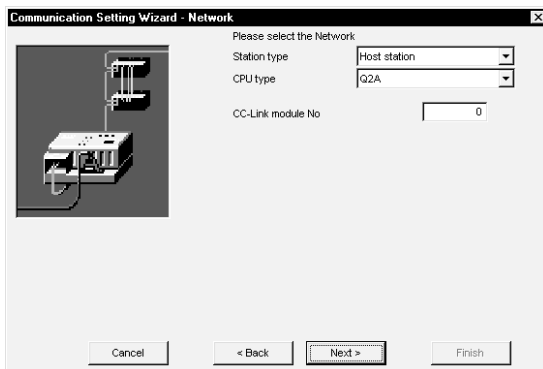
↓

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↓

5) Make settings as indicated below and click the $\boxed{\text{Next>}}$ button.

Station type   : Host station
CPU type   : Q2A
CC-Link module No : 0
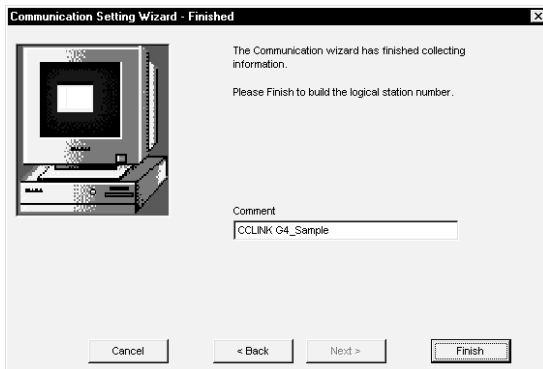
↓

6) Enter a comment and click the $\boxed{\text{Finish}}$ button.

↓

(Registration complete)

(6) Checking the logical station number settings (Conducting a communication test)

Check whether CC-Link G4 communication settings are correct or not, using the logical station number set in (5).
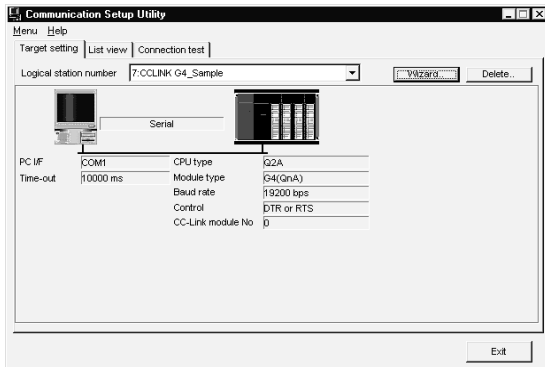
1) Display the "Target setting" tab screen and choose the logical station number "7".
Check whether the logical station number settings are correct or not.
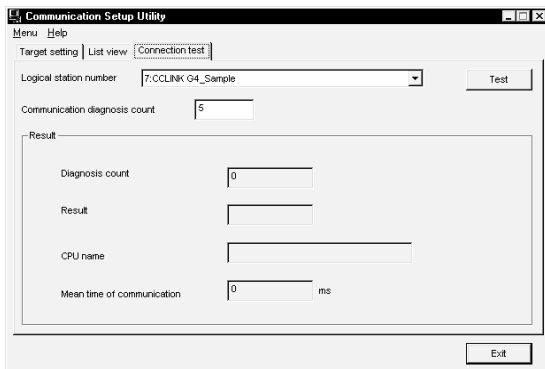
↓

2) Display the "Connection test" tab screen and set the logical station number "7".

↓

——Click!

3) Click the [Test] button to check that communication is being performed normally.
If an error occurred, check the error code and remove the error. The error code appears in Result. (At normal termination, "0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings are correct.
This logical station number is made applicable by user program creation and PLC monitor utility.
Collect device data, using this logical station number.

6.8 CPU Board Communication

This section provides the CPU board communication procedure and its setting example using the utility setting type.

### 6.8.1 Accessing procedure

The procedure for making access to the CPU board using CPU board communication will be explained in the following order.

```
                    ┌──────────────┐
                    │    START     │
                    └──────┬───────┘
                           │
        ┌──────────────────▼───────────────────┐
        │ Set the CPU board.                    │
        └──────────────────┬───────────────────┘
                           │
        ┌──────────────────▼───────────────────┐
        │ Fit the CPU board to the IBM-PC/AT    │ · · · · Refer to Chapter 2
        │ compatible and start the CPU board.   │         and Section 6.8.1 (2).
        └──────────────────┬───────────────────┘
                           │
        ┌──────────────────▼───────────────────┐
        │ Start the communication setup utility │
        │ and make setting on the communication │ · · · · Refer to Section 6.8.1 (3).
        │ setting wizard.                       │
        └──────────────────┬───────────────────┘
                           │
        ┌──────────────────▼───────────────────┐
        │ On the communication test screen,     │
        │ check whether communication can be    │ · · · · Refer to Section 6.8.1 (4).
        │ made properly.                        │
        └──────────────────┬───────────────────┘
                           │
                    ┌──────▼───────┐
                    │     END      │
                    └──────────────┘
```

(1) System example
The following system example is used in this section.

Logical station number of "8" is used.
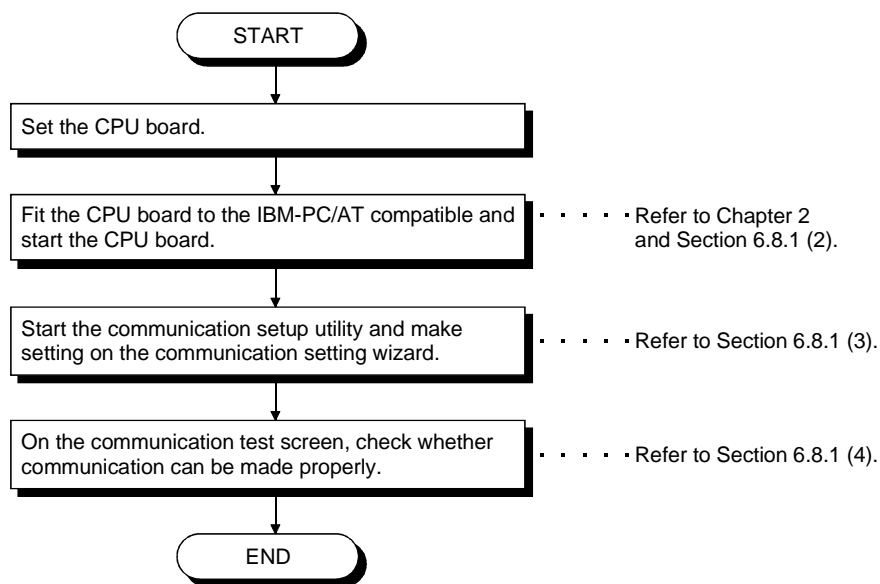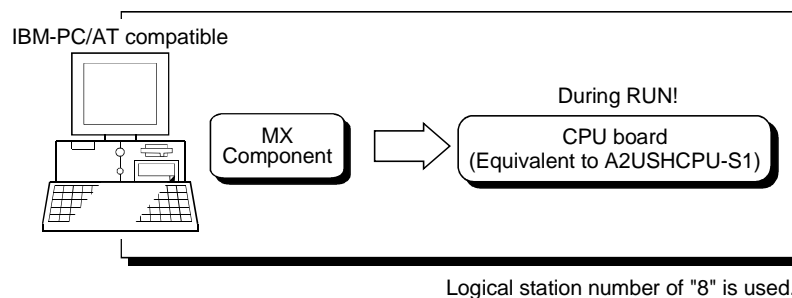
(2) Checking and starting the CPU board
Check whether the CPU board is connected to the IBM-PC/AT compatible properly and start the CPU board.

1) Click [Start]-[Programs]-[Melsec]-[AnU Utility] to start the AnU utility.
2) Check whether the CPU board is operating properly.
   Display the memory I/O test screen and click the $\boxed{\text{Start}}$ button to perform the test any number of times.
   Then, click the $\boxed{\text{Stop}}$ button to stop the test and make sure that the CPU board is normal.

↓
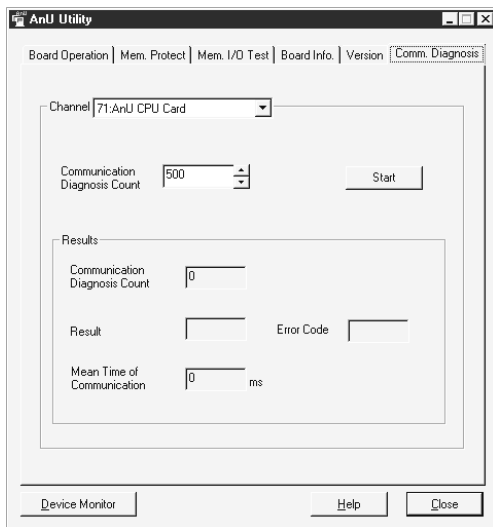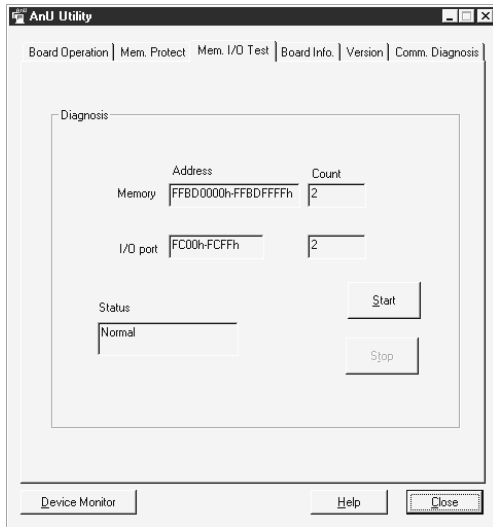
3) Display the communication diagnosis screen and click the $\boxed{\text{Start}}$ button to make sure that communication is made properly.
   If an error has occurred, check the error code and remove the error. (Refer to the CPU board manual.)

↓

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↓
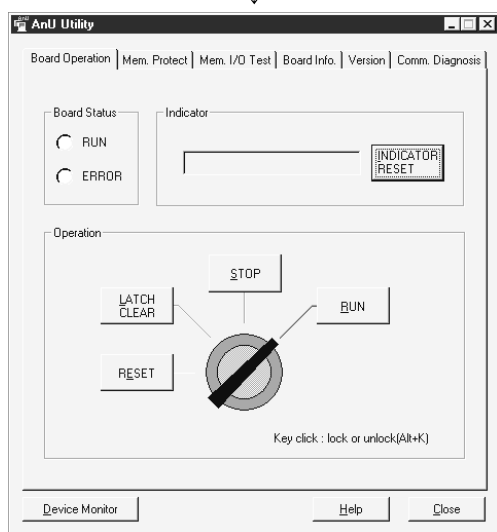
4) In this section, you must perform setting to make the CPU board running on the board operation screen since access is made while the CPU board is running.
The board operation screen appears.

↓
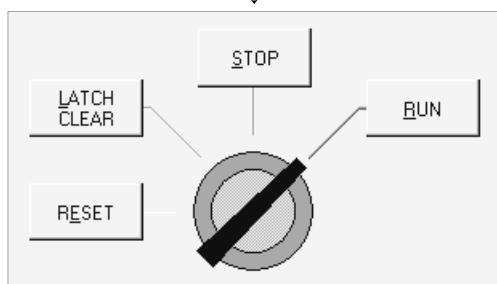
5) Click the CPU operation key to choose the unlock status.
After choosing the unlock status, click the RUN button to make the CPU board running.

↓

(Check complete)

6) Click the Close button to store the AnU utility into the taskbar.

(3)   Setting the logical station number (Setting on communication
      setting wizard)
      Logical station number setting will be described using the system example for (1).

1) Start the communication setup utility and choose the
   communication setting wizard.

2) Type "8" in Logical station number and click the $\boxed{\text{Next>}}$
   button.
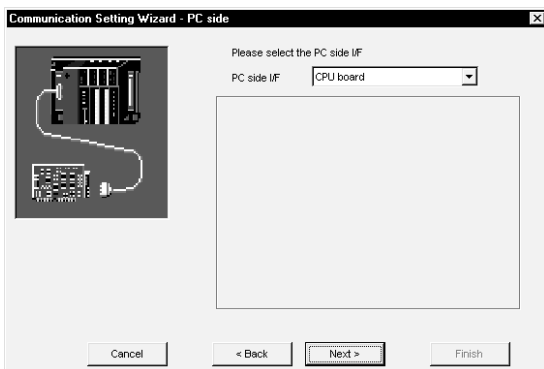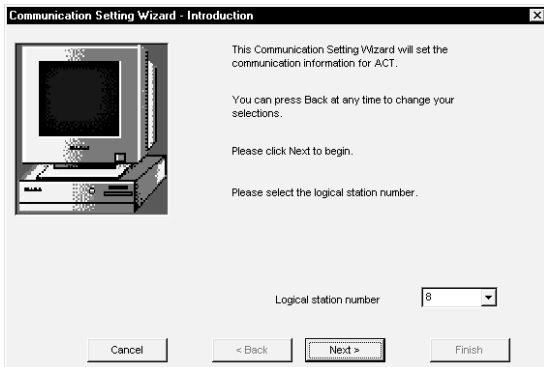
3) Make settings as indicated below and click the $\boxed{\text{Next>}}$
   button.

   PC side I/F   : CPU board
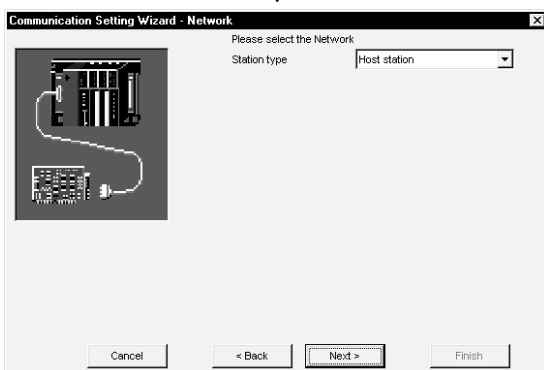
4) Make settings as indicated below and click the $\boxed{\text{Next>}}$
   button.

   Station type   : Host station

↓

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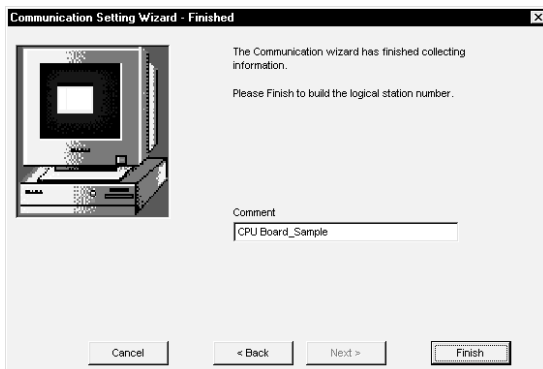
↓

5) Enter a comment and click the $\boxed{\text{Finish}}$ button.

↓

(Registration complete)

(4) Checking the logical station number settings (Conducting a communication test)

Check whether CPU board communication settings are correct or not, using the logical station number set in (3).
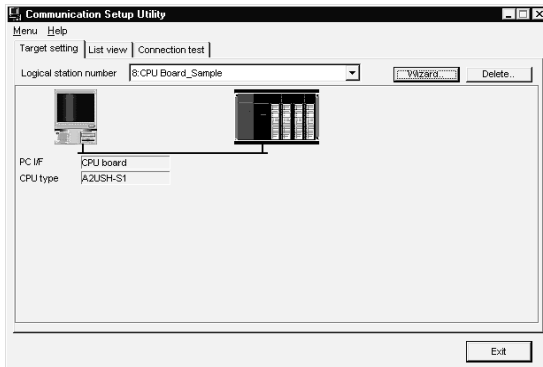
1) Display the "Target setting" tab screen and choose the logical station number "8".
   Check whether the logical station number settings are correct or not.
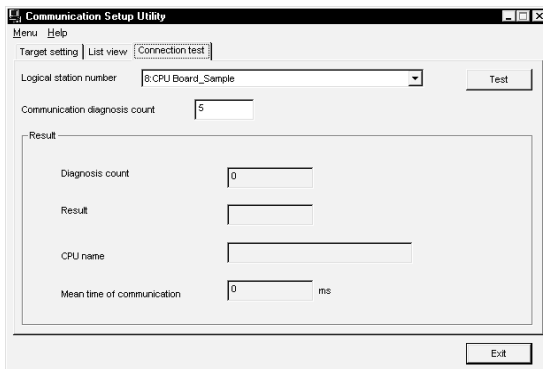
↓

2) Display the "Connection test" tab screen and set the logical station number "8".

↓

← Click!

3) Click the Test button to check that communication is being performed normally.
   If an error occurred, check the error code and remove the error.
   The error code appears in Result. (At normal termination, "0x00000000" appears in Result.)
   Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings are correct.
   This logical station number is made applicable by user program creation and PLC monitor utility.
   Collect device data, using this logical station number.

6.9 GX Simulator Communication

This section provides the GX Simulator communication procedure and its setting example using the utility setting type.

6.9.1 Accessing procedure

The procedure for making access to the GX Simulator using ladder logic communication will be explained in the following order.
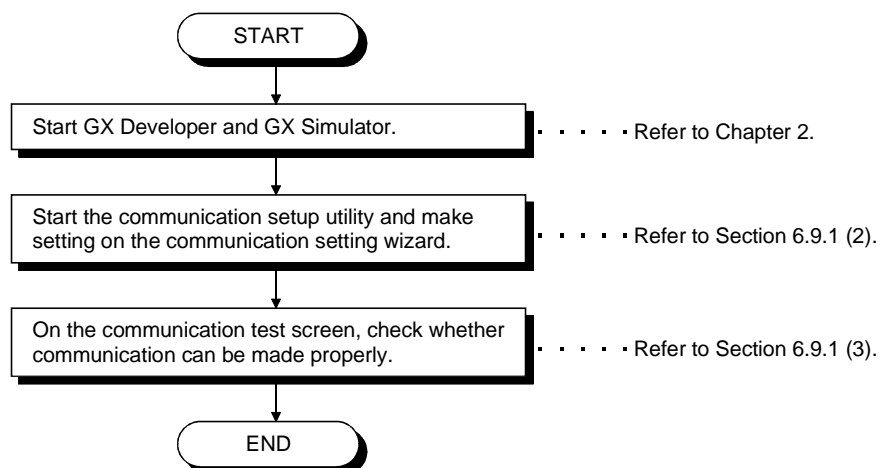
```
                    ┌─────────────┐
                    │    START    │
                    └─────────────┘
                           │
    ┌──────────────────────────────────────┐
    │ Start GX Developer and GX Simulator.  │  · · · · Refer to Chapter 2.
    └──────────────────────────────────────┘
                           │
    ┌──────────────────────────────────────┐
    │ Start the communication setup utility  │  · · · · Refer to Section 6.9.1 (2).
    │ and make setting on the communication  │
    │ setting wizard.                        │
    └──────────────────────────────────────┘
                           │
    ┌──────────────────────────────────────┐
    │ On the communication test screen, check│  · · · · Refer to Section 6.9.1 (3).
    │ whether communication can be made       │
    │ properly.                              │
    └──────────────────────────────────────┘
                           │
                    ┌─────────────┐
                    │     END     │
                    └─────────────┘
```

(1) System example
The following system example is used in this section.

Logical station number of "9" is used.
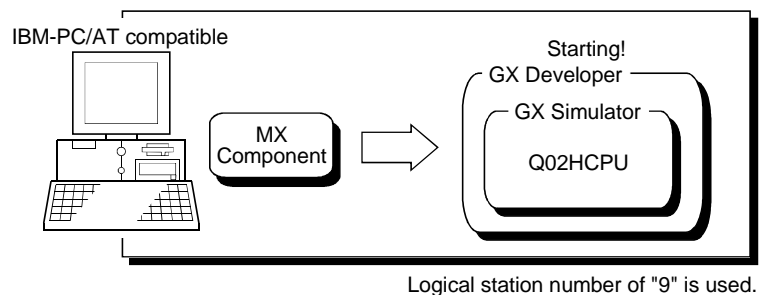
(2) Setting the logical station number (Setting on communication setting wizard)

Logical station number setting will be described using the system example for (1).

1) Start the communication setup utility and choose the communication setting wizard.

2) Type "9" in Logical station number and click the ⌐Next>⌐ button.
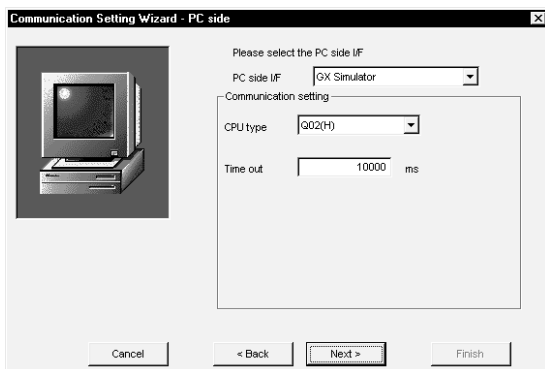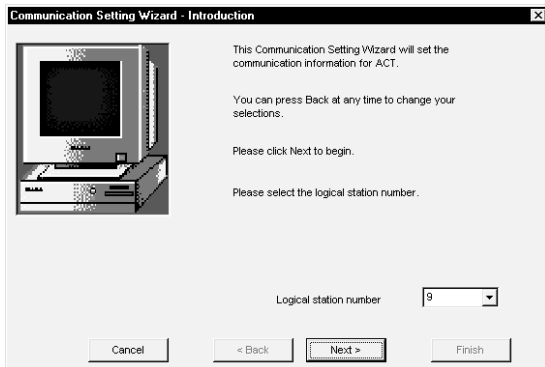
3) Make settings as indicated below and click the ⌐Next>⌐ button.

PC side I/F   : GX Simulator
CPU type   : Q02(H)
Time out   : 10000
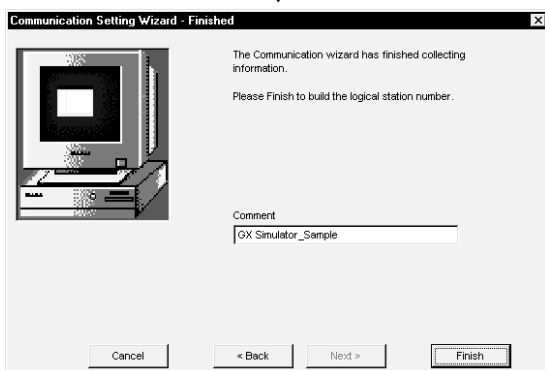
4) Enter a comment and click the ⌐Finish⌐ button.

↓

(Registration complete)

(3)   Checking the logical station number settings (Conducting a communication test)

Check whether GX Simulator communication settings are correct or not, using the logical station number set in (2).
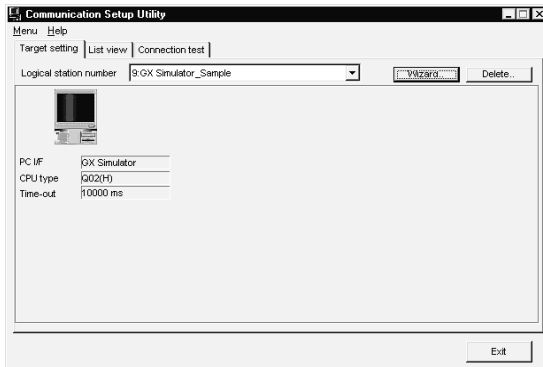
1) Display the "Target setting" tab screen and choose the logical station number "9".
Check whether the logical station number settings are correct or not.

↓
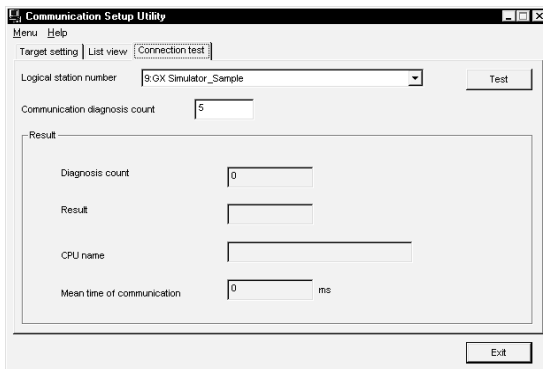
2) Display the "Connection test" tab screen and set the logical station number "9".

↓

3) Click the $\boxed{\text{Test}}$ button to check that communication is being performed normally.
If an error occurred, check the error code and remove the error. The error code appears in Result. (At normal termination, "0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings are correct.
This logical station number is made applicable by user program creation and PLC monitor utility.
Collect device data, using this logical station number.

6.10 MELSECNET/H Communication

This section provides the MELSECNET/H communication procedure and its setting example using the utility setting type.
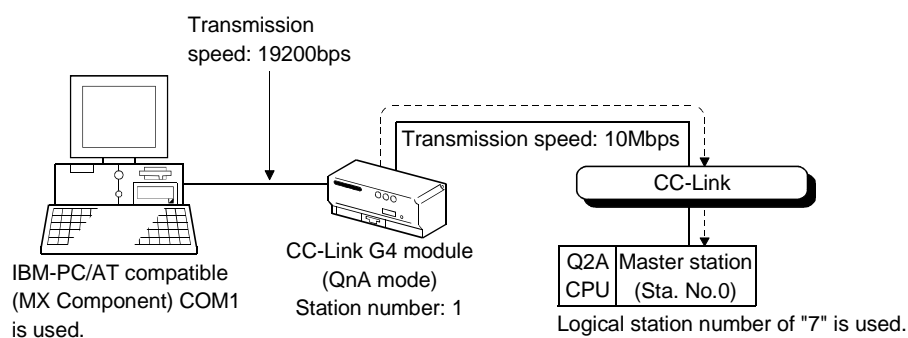
6.10.1 Accessing procedure

The procedure for making access to the PLC CPU using MELSECNET/H communication will be explained in the following order.
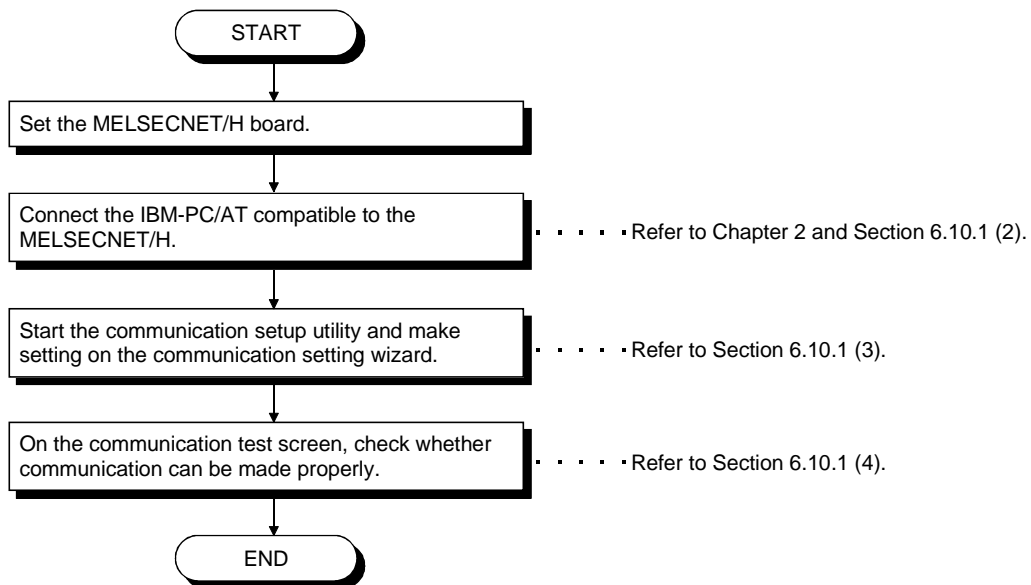
(1) System example
   The following system example is used in this section.
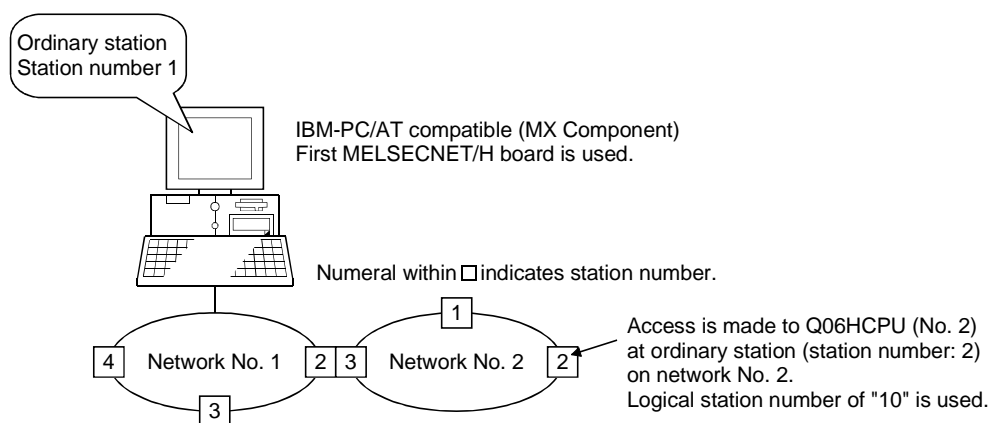
(2)   Checking the MELSECNET/H board
Check whether the IBM-PC/AT compatible is connected properly to the MELSECNET/H.

1) Click [Start]-[Program]-[Melsec]-[MELSECNETH Utility] to start the MELSECNET/H utility.
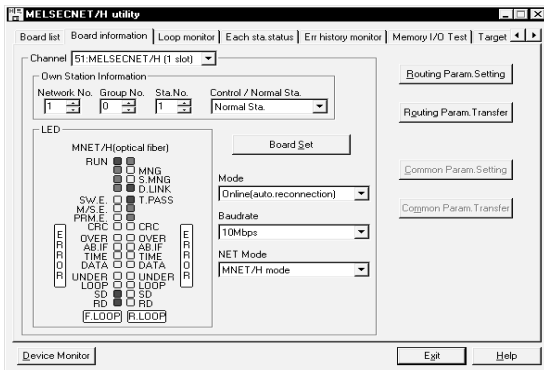
2) Call the board information screen, make the following settings, and click the $\boxed{\text{Board Set}}$ button. After that, click the $\boxed{\text{Routing Param. Setting}}$ button.

Channel   : Set "51:MELSECNET/H (1 slot)".
Mode   : Set "Online (automatic reconnector)".
Baud rate   : Any (10Mbps here)
NET mode   : MNET/H mode

↓
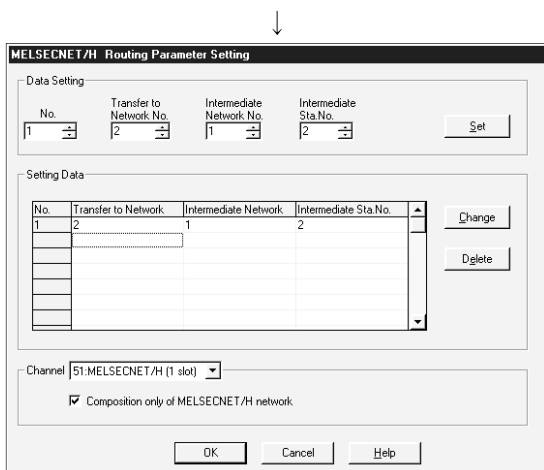
3) Set the routing parameters and click the $\boxed{\text{Set}}$ button.

Target network No.   : 2
Intermediate Network   : 1
Intermediate Sta. No.   : 2

After that, click the $\boxed{\text{OK}}$ button to close the dialog box.
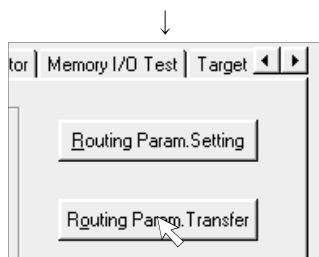
↓

4) Click the $\boxed{\text{Routing Param. Transfer}}$ button to transfer the routing parameters to the MELSECNET/H board.

↓

(To the next page)
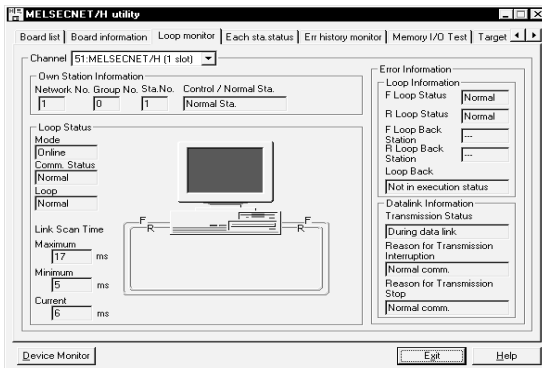
(From the preceding page)

↓

5) Click the "Loop monitor" tab and make sure that the loop is normal.

↓

(Check complete)

6) Click the ⌈Exit⌋ button to exit from the utility.

(3) Setting the logical station number (Setting on communication setting wizard)

Logical station number setting will be described using the system example for (1).

1) Start the communication setup utility and choose the communication setting wizard.

2) Type "10" in Logical station number and click the ⌈Next>⌋ button.

↓
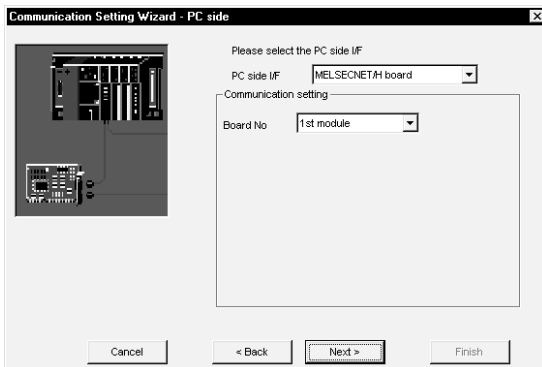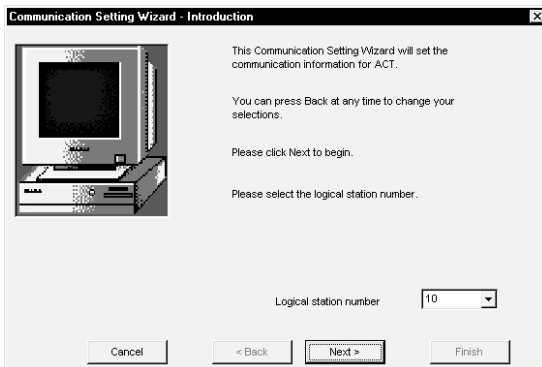
3) Make settings as indicated below and click the ⌈Next>⌋ button.

PC side I/F   : MELSECNET/H board
Board No   : 1st module
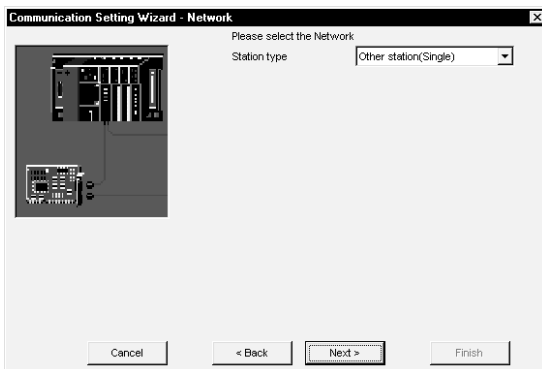
↓

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↓

4) Make settings as indicated below and click the [Next>] button.

Station type : Other station(Single)

↓
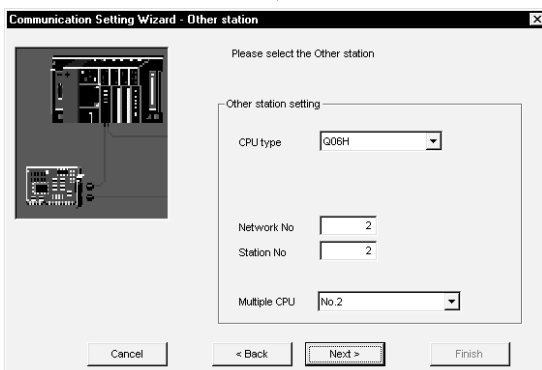
5) Make settings as indicated below and click the [Next>] button.

CPU type : Q06H
Network No : 2
Station No : 2
Multiple CPU : No.2
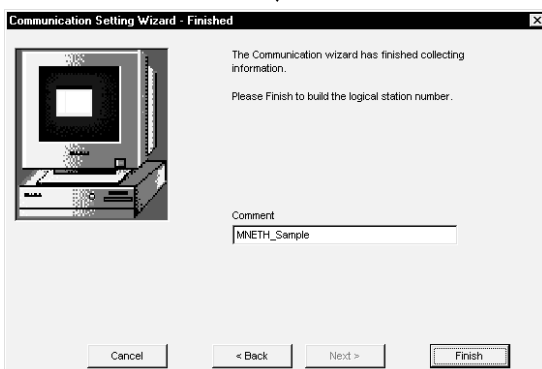
↓

6) Enter a comment and click the [Finish] button.

↓

(Registration complete)

(4) Checking the logical station number settings (Conducting a communication test)

Check whether the MELSECNET/H communication settings are correct or not, using the logical station number set in (3).
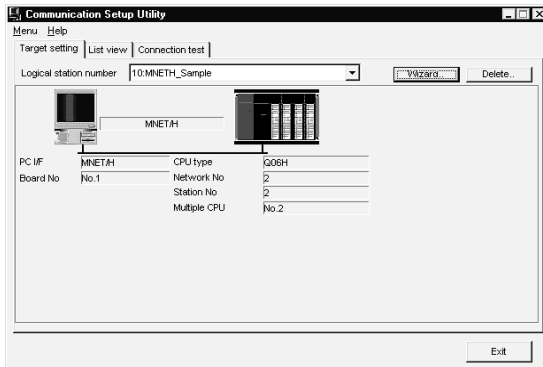
1) Display the "Target setting" tab screen and choose the logical station number "10".
Check whether the logical station number settings are correct or not.
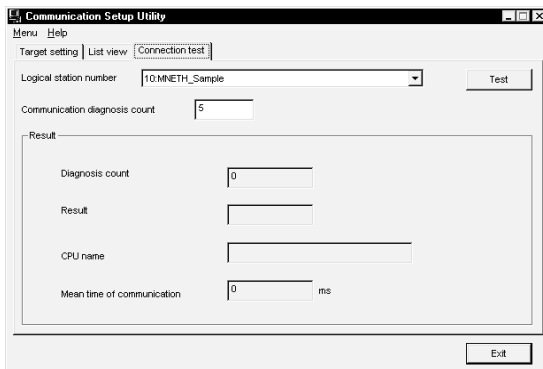
↓

2) Display the "Connection test" tab screen and set the logical station number "10".

↓

Click!

3) Click the ⎡Test⎤ button to check that communication is being performed normally.
If an error occurred, check the error code and remove the error. The error code appears in Result. (At normal termination, "0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings are correct.
This logical station number is made applicable by user program creation and PLC monitor utility.
Collect device data, using this logical station number.

6.11 Q Series Bus Communication

This section provides the Q series bus communication procedure and its setting example using the utility setting type.

6.11.1 Accessing procedure

The procedure for making access to the PLC CPU using Q series bus communication will be explained in the following order.
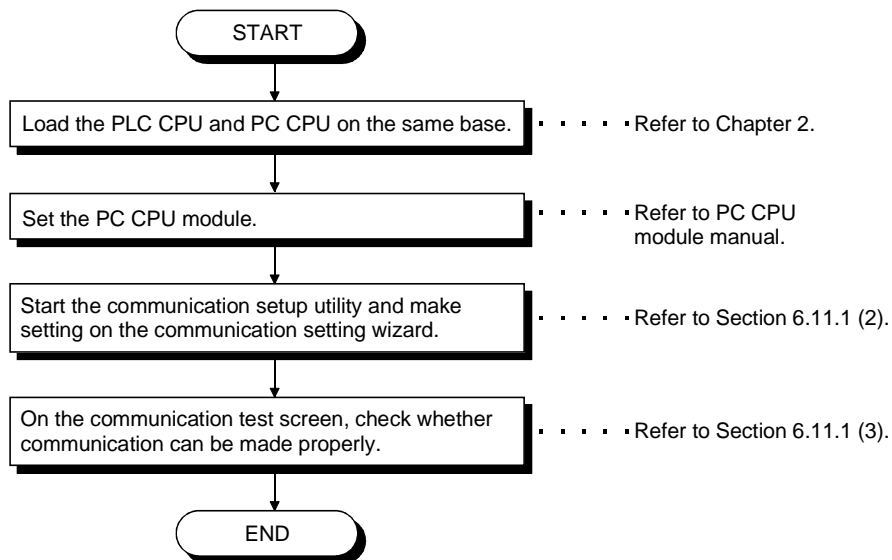
START	
Load the PLC CPU and PC CPU on the same base.	· · · · Refer to Chapter 2.
Set the PC CPU module.	· · · · Refer to PC CPU module manual.
Start the communication setup utility and make setting on the communication setting wizard.	· · · · Refer to Section 6.11.1 (2).
On the communication test screen, check whether communication can be made properly.	· · · · Refer to Section 6.11.1 (3).
END	

(1)   System example
The following system example is used in this section.

PC CPU module

Q12HCPU (No. 3)
Use "11" as logical station number.
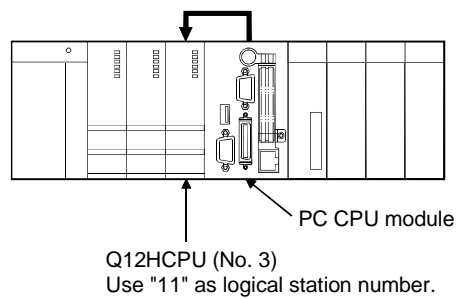
(2)   Setting the logical station number (Setting on communication setting wizard)

Logical station number setting will be described using the system example for (1).
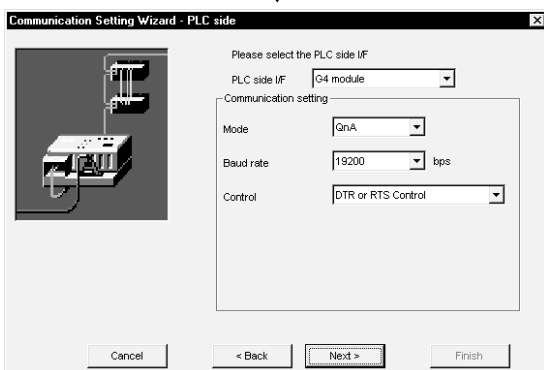
1) Start the communication setup utility and choose the communication setting wizard.

2) Type "11" in Logical station number and click the ⌐Next>⌐ button.
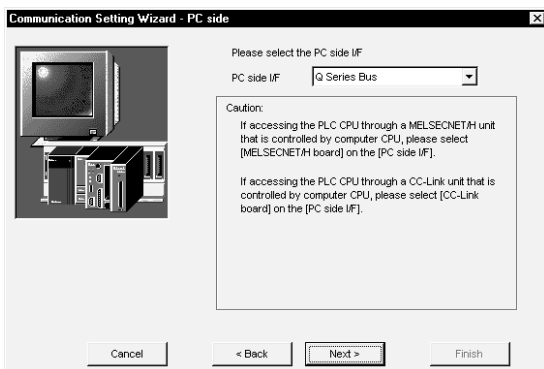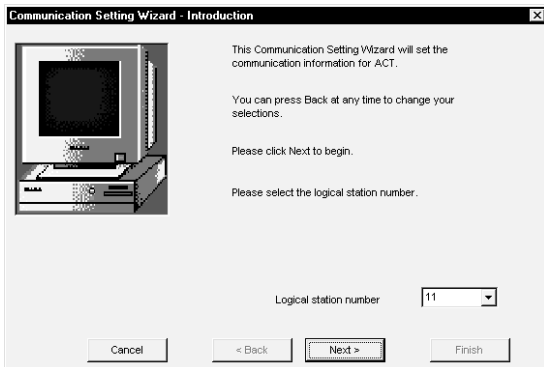
3) Make settings as indicated below and click the ⌐Next>⌐ button.

PC side I/F   : Q Series Bus
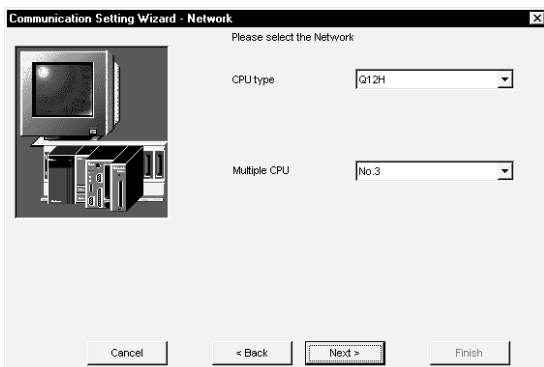
4) Make settings as indicated below and click the ⌐Next>⌐ button.

CPU type   : Q12H
Multiple CPU   : No.3

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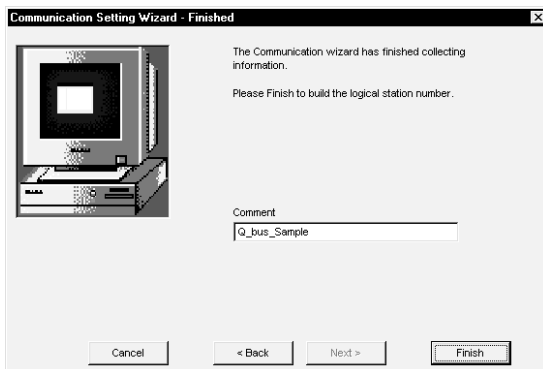
↓

5) Enter a comment and click the ⌐Finish⌐ button.

↓

(Registration complete)

(3)   Checking the logical station number settings (Conducting a communication test)
Check whether the Q series bus communication settings are correct or not, using the logical station number set in (2).
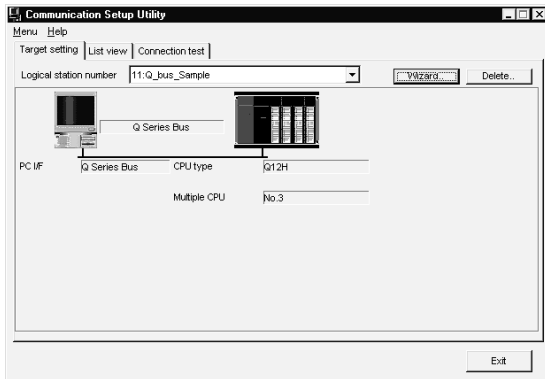
1) Display the "Target setting" tab screen and choose the logical station number "11".
Check whether the logical station number settings are correct or not.

↓
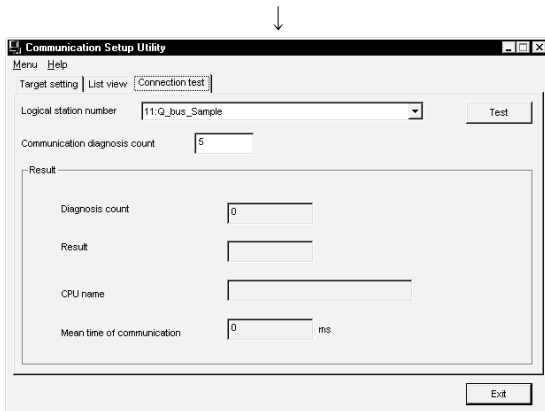
2) Display the "Connection test" tab screen and set the logical station number "11".

↓

3) Click the [Test] button to check that communication is being performed normally.
If an error occurred, check the error code and remove the error.
The error code appears in Result. (At normal termination, "0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings are correct.
This logical station number is made applicable by user program creation and PLC monitor utility.
Collect device data, using this logical station number.

6.12 Modem Communication

This section explains the modem communication procedures and setting examples for the utility setting type.

```
POINT
When performing modem communication for the first time on MX Component,
check whether normal modem communication can be performed using GX
Developer, and then start modem communication using MX Component.
```

6.12.1 Switch settings of A6TEL, Q6TEL, QC24N, Q Series Corresponding C24

This section explains the switch settings of the modules for use of MX Component.

```
POINT
When MX Component is used, the settings of other than "As set by user" in the
table are fixed to the settings in the table.
```

(1)   A6TEL

Switch	Setting	
	Switch Number	Setting
	1	OFF (Telephone line connection mode)
DIP switches	2	OFF (Notification processing execution mode)
	3	OFF (Remote access enable mode)
	4	OFF

(2)   Q6TEL

Switch	Setting			
	A mode		QnA mode	
A/QnA select switch	A (A mode)		QnA (QnA mode)	
MODEM/PLG select switch	MODEM (remote access) status		MODEM (remote access) status	
	Switch Number	Setting	Switch Number	Setting
	1	OFF (Telephone line connection mode)	1	OFF (Telephone line connection mode)
DIP switches	2	OFF (Notification processing execution mode)	2	OFF
	3	OFF (Remote access enable mode)	3	OFF
	4	OFF	4	OFF

(3) QC24N

Switch (Switch Number)		Setting	
		CH1 side *1	CH2 side
Mode setting switch		5 format (5)	As set by user *3
Station number setting switch		0	
Transmission specification setting switches	Operation setting switch (SW01)	OFF (Independent operation)	OFF (Independent operation)
	Data bit setting (SW02)	ON (8)	As set by user *3
	Parity bit presence/absence setting (SW03)	OFF (No)	As set by user *3
	Even parity/odd parity setting (SW04)	OFF (Odd)	As set by user *3
	Stop bit setting (SW05)	OFF (1bit)	As set by user *3
	Sumcheck yes/no setting (SW06)	ON (Yes)	As set by user *3
	Online change enable/disable setting (SW07)	ON (Enable)	As set by user *3
	Setting change enable/disable setting (SW08)	As set by user	As set by user *3
	Transmission speed setting (SW09 to SW12)	As set by user *2	As set by user *3
─	(SW13 to SW15)	All OFF	All OFF

*1: Modem communication is available on the CH1 side only.

*2: Make settings to meet the modem specifications.

*3: When using CH2, enter the values as set by the user.

(4) Q Series Corresponding C24 (When performing modem communication on CH1 side)

Item	Settings		Set Value
	b15 to b8	b7 to b0	
Switch 1	CH1 communication speed *1	CH1 transmission setting *2	*3
Switch 2	─	CH1 communication protocol	0005$_H$
Switch 3	CH2 communication speed	CH2 transmission setting *2	*4
Switch 4	─	CH2 communication protocol	*4
Switch 5	Module station number		As set by user

*1: Make settings to meet the modem specifications.

*2: Settings of CH1 and CH2 are indicated below.

*3: Confirm the settings of the CH1 communication speed and CH1 transmission setting, and enter the set values.

*4: When using CH2, enter the values as set by the user.

b7 b6 b5 b4 b3 b2 b1 b0

CH1 side
CH2 side

Bit	Description	Settings	
		CH1 transmission setting	CH2 transmission setting
b0	Operation setting	0 (Independent)	0 (Independent)
b1	Data bit	1 (8)	As set by user *4
b2	Parity bit	0 (No)	As set by user *4
b3	Odd/even parity	0 (Odd)	As set by user *4
b4	Stop bit	0 (1)	As set by user *4
b5	Sumcheck code	1 (Yes)	As set by user *4
b6	Online change	1 (Enable)	As set by user *4
b7	Setting change	As set by user	As set by user *4

*4: When using CH2, enter the values as set by the user.

6.12.2 Access procedure

This section explains the procedure for accessing the PLC CPU using modem communication in the following flowchart.

<When A6TEL or Q6TEL is used>

Set the A6TEL or Q6TEL and connect it to the modem. ····· Refer to the GX Developer Operating Manual.

Connect "LINE" of the modem and the telephone line.

When the modem has the ANS/ORG/TEL switch, set it to the "TEL" mode.

··· Refer to the manual of the used modem.

Start the communication settings utility and make settings using the communication settings wizard. *1 ····· Refer to 6.12.2 (5).

Check whether normal communication can be made on the communication test screen. *2 ····· Refer to 6.12.2 (6).

*1: When using Q6TEL in A mode, set the "Connect module" as "A6TEL" on the communication setting wizard.
*2: If normal communication cannot be made, refer to "Appendix 6 Flowchart for the Case Where Access Cannot Be Made during Modem Communication" and take corrective action.

<When FXCPU is used>

Set the FXCPU and connect it to the modem. ····· Refer to the GX Developer Operating Manual.

Start the communication settings utility and make settings using the communication settings wizard. ····· Refer to 6.12.2 (5).

Check whether normal communication can be made on the communication test screen. *1 ····· Refer to 6.12.2 (6).

*1: If normal communication cannot be made, refer to "Appendix 6 Flowchart for the Case Where Access Cannot Be Made during Modem Communication" and take corrective action.

<QC24N, Q series-compatible C24>

Start

When using the QC24N, set the mode setting and transmission setting switches.
When using the Q series-compatible C24, set the software switches. · · · · Refer to 6.12.2 (2).

In the sequence program, set the items to be written. · · · · Refer to 6.12.2 (4).
1) Write the AT command (ATS0=1).
2) Set the initialization request.

Start the communication settings utility and make settings using the communication settings wizard. · · · · · Refer to 6.12.2 (5).

Check whether normal communication can be made on the communication test screen. *1 · · · · · Refer to 6.12.2 (6).

End

*1: If normal communication cannot be made, refer to "Appendix 6 Flowchart for the Case Where Access Cannot Be Made during Modem Communication" and take corrective action.

(1) System example
The following system example is used in this section.
"(5) Setting the logical station number (setting of communication setting wizard)" and later are described using the Q series-compatible C24 system example.

<When A6TEL or Q6TEL is used>

A2USH CPU-S1

A6TEL, Q6TEL (A mode)

modem

modem

IBM-PC/AT compatible
(MX Component)
COM1 is used.

<When Q6TEL (QnA mode) is used>

Q2ACPU

Q6TEL (QnA mode)

modem

modem

IBM-PC/AT compatible
(MX Component)
COM1 is used.

<When FXCPU is used>

FX2NC

modem

modem

IBM-PC/AT compatible
(MX Component)
COM1 is used.

<When QC24N is used>

Q2ACPU | QC24N (Station No. 0)

modem

modem

IBM-PC/AT compatible
(MX Component)
COM1 is used.

<Q series-compatible C24>

Q25HCPU | Q series-compatible C24 (Station No. 0)

modem 2)

"12" is used as logical station number.

Pushbutton dialing line (tone)

modem 1)

IBM-PC/AT compatible
(MX Component)
COM1 is used.

(2)   Setting the Switch of A6TEL, Q6TEL, QC24N,
Q Series Corresponding C24

(a)   A6TEL, Q6TEL
The A6TEL and Q6TEL switch setting examples in this section are the
same as in "Section 6.12.1 Switch settings of A6TEL, Q6TEL, QC24N and
Q Series Corresponding C24".
For details, refer to "Section 6.12.1 Switch settings of A6TEL, Q6TEL,
QC24N and Q Series Corresponding C24".

(b)   QC24N

Switch (Switch Number)		Settings	
		CH1 side *1	CH2 side
Mode setting switch		5 (format 5)	5 (format 5)
Station number setting switch		0	
Transmission specification setting switches	Operation setting switch (SW01)	OFF (Independent operation)	OFF (Independent operation)
	Data bit setting (SW02)	ON (8)	ON (8)
	Parity bit presence/absence setting (SW03)	OFF (No)	OFF (No)
	Even parity/odd parity setting (SW04)	OFF (Odd)	OFF (Odd)
	Stop bit setting (SW05)	OFF (1bit)	OFF (1bit)
	Sumcheck yes/no setting (SW06)	ON (Yes)	ON (Yes)
	Online change enable/disable setting (SW07)	ON (Enable)	ON (Enable)
	Setting change enable/disable setting (SW08)	OFF (Disable)	ON (Enable)
	Transmission speed setting (SW09 to SW12)	19200bps | SW	Settings
---	---
SW09	OFF
SW10	ON
SW11	ON
SW12	OFF		19200bps | SW	Settings
---	---
SW09	OFF
SW10	ON
SW11	ON
SW12	OFF	
	─ (SW13 to SW15)	All OFF	All OFF

*1: Modem communication is available on the CH1 side only.

(c) Q series-compatible C24 (When modem communication is made on CH1 side)

Item	Settings		Set Value
	b15 to b8	b7 to b0	
Switch 1	CH1 communication speed	CH1 transmission setting ＊1	0762$_H$
Switch 2	—	CH1 communication protocol	0005$_H$
Switch 3	CH2 communication speed	CH2 transmission setting ＊1	0000$_H$
Switch 4	—	CH2 communication protocol	0000$_H$
Switch 5	Module station number		0000$_H$

＊1: Settings of CH1 and CH2 are indicated below.

Bit	Description	Settings	
		CH1 transmission setting	CH2 transmission setting
b0	Operation setting	0 (Independent)	0 (Independent)
b1	Data bit	1 (8)	0 (7)
b2	Parity bit	0 (No)	0 (No)
b3	Odd/even parity	0 (Odd)	0 (Odd)
b4	Stop bit	0 (1)	0 (1)
b5	Sumcheck code	1 (Yes)	0 (No)
b6	Online change	1 (Enable)	0 (Disable)
b7	Setting change	0 (Disable)	0 (Disable)
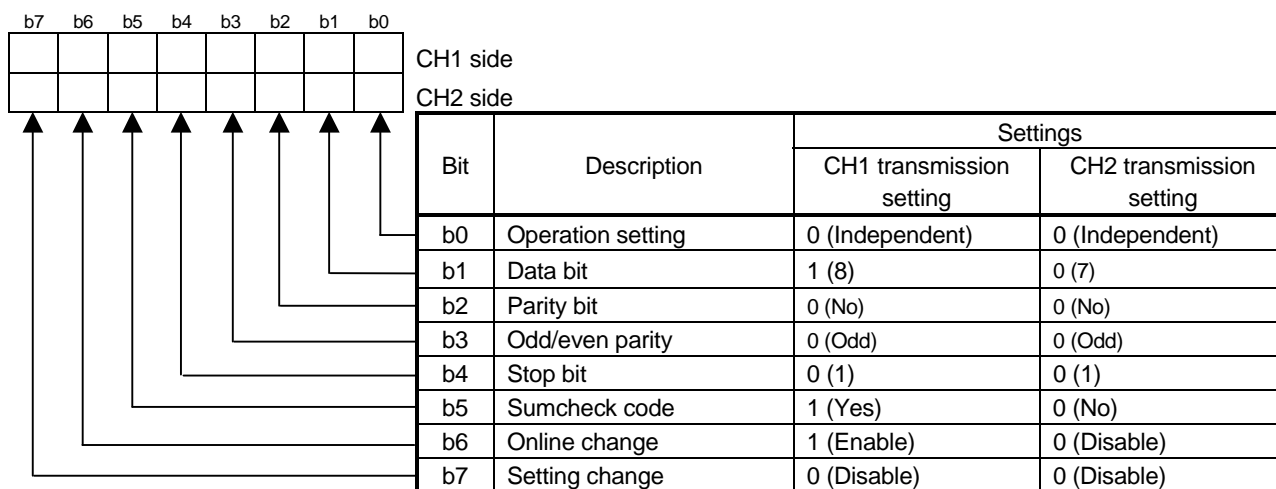
(3)   Setting the A6TEL or Q6TEL data
To use the the A6TEL or Q6TEL, set the A6TEL or Q6TEL data.
For the settings and setting methods, refer to the GX Developer Operating Manual.

(4)   Connect the FXCPU, QC24N or Q series-compatible C24 and the modem.
(a)   FXCPU
A sequence program is required for use of the FXCPU.

```
* The modem initialization command is set in D1000-D1025.
* The AT command of ATE0S0=2Q1&D0&M4\Q0\J0&W is set.
                                                     * <"A" (H41) is set in D1000.      >
      M8002
   0 ─┤ ├─────────────────────────────────────────[MOV    H41        D1000    ]
                                                     * <"T"(H54) is set in D1001.       >
     │                                              [MOV    H54        D1001    ]
                                                     * <"E"(H45) is set in D1002.       >
     │                                              [MOV    H45        D1002    ]
                                                     * <"0"(H30) is set in D1003.       >
     │                                              [MOV    H30        D1003    ]
                                                     * <"S"(H53) is set in D1004.       >
     │                                              [MOV    H53        D1004    ]
                                                     * <"0"(H30) is set in D1005.       >
     │                                              [MOV    H30        D1005    ]
                                                     * <"="(H3D) is set in D1006.       >
     │                                              [MOV    H3D        D1006    ]
                                                     * <"2"(H32) is set in D1007.       >
     │                                              [MOV    H32        D1007    ]
                                                     * <"Q"(H51) is set in D1008.       >
     │                                              [MOV    H51        D1008    ]
                                                     * <"1"(H31) is set in D1009.       >
     │                                              [MOV    H31        D1009    ]
                                                     * <"&"(H26) is set in D1010.       >
     │                                              [MOV    H26        D1010    ]
                                                     * <"D"(H44) is set in D1011.       >
     │                                              [MOV    H44        D1011    ]
                                                     * <"0"(H30) is set in D1012.       >
     │                                              [MOV    H30        D1012    ]
```

↓
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```
┌────────────────────────────────────────────────────────────────────────────┐
│  POINT                                                                       │
├────────────────────────────────────────────────────────────────────────────┤
│  This sample sequence program is installed into the following folders after  │
│  installation of MX Component.                                               │
│  [User-specified folder]-[Act]-[Sample]-[Gppw]-[Fxcputel]                    │
└────────────────────────────────────────────────────────────────────────────┘
```

(From the Preceding page)
↓

```
                                          * <"&"(H26) is set in D1013.        >
    M8002
66 ──┤ ├──┬──────────────────────────────[MOV    H26      D1013  ]
        │                                 * <"M"(H4D) is set in D1014.        >
        ├──────────────────────────────[MOV    H4D      D1014  ]
        │                                 * <"4"(H34) is set in D1015.        >
        ├──────────────────────────────[MOV    H34      D1015  ]
        │                                 * <"\"(H5C) is set in D1016.        >
        ├──────────────────────────────[MOV    H5C      D1016  ]
        │                                 * <"Q"(H51) is set in D1017.        >
        ├──────────────────────────────[MOV    H51      D1017  ]
        │                                 * <"0"(H30) is set in D1018.        >
        ├──────────────────────────────[MOV    H30      D1018  ]
        │                                 * <"\"(H5C) is set in D1019.        >
        ├──────────────────────────────[MOV    H5C      D1019  ]
        │                                 * <"J"(H4A) is set in D1020.        >
        ├──────────────────────────────[MOV    H4A      D1020  ]
        │                                 * <"0"(H30) is set in D1021.        >
        ├──────────────────────────────[MOV    H30      D1021  ]
        │                                 * <"&"(H26) is set in D1022.        >
        ├──────────────────────────────[MOV    H26      D1022  ]
        │                                 * <"W"(H57) is set in D1023.        >
        ├──────────────────────────────[MOV    H57      D1023  ]
        │                                 * <"CR"(H0D) is set in D1024.       >
        ├──────────────────────────────[MOV    H0D      D1024  ]
        │                                 * <"LF"(H0A) is set in D1025.       >
        └──────────────────────────────[MOV    H0A      D1025  ]

132 ──────────────────────────────────────────────────[END    ]
```

(b) QC24N

Using the QC24N requires a sequence program to set the following buffer memory addresses.

The following table indicates the buffer memory addresses that must be set and the sequence program.

Setting Item (Buffer Memory Address)	Settings	Setting in Sample Sequence Program
Modem connection channel designation (2EH)	0: Not connected (modem function is not used) 1: CH1 side interface 2: CH2 side interface	1 (CH1)
Initialization data No. designation (34H) ∗1	0H: Send of initialization data specified in the sending user registration frame specifying area 7D0H to 7D4H: Initialization data No.	2000 (No. 2000)
Q6TEL connection designation (36H)	0: Does not make communication as Q6TEL. 1: Makes communication as Q6TEL.	1 (Communicate as Q6TEL)
No-communication interval time designation (37H)	0: Unlimited waiting 1 to 120: No-communication interval time (line disconnection waiting time)	10 (10 minutes)

∗1: The following initialization data are factor-registered to the QC24N.

When the modem used corresponds to the initialization data (7D0H to 7D4H), specify the following registration number.

When using the modem where the initialization data have not been registered, register the AT command to the E^{2}PROM or buffer memory address (1B00H) of the QC24N.

Registration No.		Initialization Command	Corresponding Device	
Hexadecimal	Decimal		Maker	Type
7D0H	2000	ATQ0V1E1X1\J0\Q2\V2\N3S0=1	Aiwa	PV-AF2881WW PV-BF288M2
7D1H	2001	ATQ0V1E1X1\Q2\V2\N3S0=1	Micro General Laboratory	MC288XE MC288X1
7D2H	2002	ATQ0V1E1X1&K3\N3S0=1	Microcom	DESKPORTE22.8S DESKPORTE33.6S
7D3H	2003	ATQ0V1E1X1&H1&R2&A3&D2S0=1	Omron	ME3314B
7D4H	2004	ATQ0V1E1X1\J0\Q2\N3S0=1	Sun Electronic	MS336AF

Initial processing

```
                                                          <Turn on QC24N accessible flag   >
    X1E      X1F
0 ──┤├───────┤/├──────────────────────────────────────────────────────(M0      )
  QC24N re  WDT erro                                                    QC24N ac
  ady        r                                                         cessible


                                                          <Turn on initialization enabled  >
     M0      M3      X10     X12     X13     Y10
31 ──┤├──────┤/├─────┤/├─────┤/├─────┤/├─────┤/├─────────────────────────(M30     )
  QC24N ac  Initiali Initiali Connecti Abnormal Initiali                Initiali
  cessible  zation c zation c on in pr complet zation r                 zation e
            ompletio ompletio ogress   ion     equest                   nabled
            n flag    n

                                                          <Set modem connection channel No >
     M0
56 ──┤├──────┬──────────────────────────────────[TOP    H0     H2E    K1     K1    ]
  QC24N ac   │
  cessible   │

                                                          <Set Q6TEL connection            >
             ├──────────────────────────────────[TOP    H0     H36    K1     K1    ]

                                                          <Set no-communication interval   >
             └──────────────────────────────────[TOP    H0     H37    K10    K1    ]

* Convert the initialization command into pulse
                                                          <Initialization command into puls>
    SM400
119 ──┤├─────────────────────────────────────────────────[PLS    M31     ]
  Turning                                                        Initiali
  on alway                                                       zation c
  s                                                              ommand i
                                                                 nto puls

                                                          <Set the Data for initialization >
    M31      M30
141 ──┤├──────┤├──────────────────────────────────[TOP    H0     H34    K2000  K1    ]
  Initiali  Initiali
  zation c  zation e
  ommand i  nabled
  nto puls

                                                          <Turn on initialization request  >
             ├──────────────────────────────────────────[SET    Y10     ]
                                                                 Initiali
                                                                 zation r
                                                                 equest

                                                          <Turn on initial request flag    >
             └──────────────────────────────────────────[SET    M39     ]
                                                                 Initial
                                                                 request
                                                                 flag
```

↓
(To the next page)

POINT
This sample sequence program is installed into the following folders after installation of MX Component. [User-specified folder]-[Act]-[Sample]-[Gppw]-[AJ71QC24NTEL]

(From the Preceding page)
↓

```
                                                              <Turn on initial completion flag >
      Y10       X10                                                          ┌SET    M3        ┐
201 ──┤├────────┤├──────────────────────────────────────────────────────────┤              │
    Initiali  Initiali                                                        │       Initiali │
    zation r  zation c                                                        │       zation c │
    equest    ompletio                                                        │       ompletio │
              n                                                               │       n flag   │

                                                              <Turn off initialization request >
                                                                             ┌RST    Y10       ┐
       └──────────────────────────────────────────────────────────────────┤              │
                                                                             │       Initiali │
                                                                             │       zation r │
                                                                             │       equest   │

                                                                             ┌END             ┐
241 ────────────────────────────────────────────────────────────────────────┤              │
```

(b) Q series-compatible C24

Using the Q series-compatible C24 requires a sequence program to set the following buffer memory addresses.

The following table indicates the buffer memory addresses that must be set and the sequence program. Setting Item (Buffer Memory Address)	Settings
Modem connection channel designation ($2E_H$)	0: Not connected (modem function is not used) 1: CH1 side interface 2: CH2 side interface
Initialization data No. designation (34_H) *1	0_H: Send of initialization data specified in the sending user registration frame specifying area $7D0_H$ to $7D4_H$: Initialization data No.
GX Developer connection designation (36_H)	0: Not connected 1: Connected.
Callback function designation (2001_H)	0_H: Auto line connect 1_H: Callback connect (Fixation) 3_H: Callback connect (Number specification) 7_H: Callback connect (Number specification (max. 10 units)) 9_H: Auto line connect (Callback fixation) B_H: Auto line connect (Callback number specification) F_H: Auto line connect (Callback number specification (max. 10 units))

*1: The following initialization data are factor-registered to the Q series-compatible C24.
When the modem used corresponds to the initialization data ($7D0_H$ to $7DA_H$), specify the following registration number.
When using the modem where the initialization data have not been registered, register the AT command to the buffer memory address ($1B00_H$) of the Q series-compatible C24.

Registration No.		Initialization Command	Corresponding Device	
Hexadecimal	Decimal		Maker	Type
$7D0_H$	2000	ATQ0V1E1X1\J0\Q2\V2\N3S0=1	Aiwa	PV-AF2881WW PV-BF288M2
$7D1_H$	2001	ATQ0V1E1X1\Q2\V2\N3S0=1	Micro General Laboratory	MC288XE MC288X1
$7D2_H$	2002	ATQ0V1E1X1&K3\N3S0=1	Microcom	DESKPORTE22.8S DESKPORTE33.6S
$7D3_H$	2003	ATQ0V1E1X1&H1&R2&A3&D2S0=1	Omron	ME3314B
$7D4_H$	2004	ATQ0V1E1X1\J0\Q2\N3S0=1	Sun Electronic	MS336AF
$7D5_H$	2005	ATE1Q0V1&C1&D2&H1&I0&R2&S0S0=1	Omron	ME5614B
$7D6_H$	2006	ATE1Q0V1&C1&D2&K3&S0S0=1	Sun Electronic	MS56KAF
			Micro General Laboratory	MRV56XL
			Matsushita Electric	VS-2621A
$7D7_H$	2007	ATE1Q0V1&C1&D2&K3&S1S0=1		VC-173
$7D8_H$	2008	ATE1Q0V1&C1&D2&K3&S0S0=1	Omron	MT128B -D
$7D9_H$	2009	ATE1Q0V1&C1&D1\Q2&S0S0=1	Sun Electronic	TS128JX
$7DA_H$	2010	ATE1Q0V1&C1&D2\Q3&S0S0=1	Sharp	DN-TA1
$7DC_H$	2012	AT&S0S0=1	General	
$7DD_H$	2013	ATX1&S0S0=1	*Use this device for operation check. If the device does not operate, create the initialization command, which matches the modem specifications, on the user side.	

1) When callback function is not used

Setting Item (Buffer Memory Address)	Settings	Setting Item (Buffer Memory Address)	Settings
Modem connection channel designation (2E$_H$)	1 (CH1)	GX Developer connection designation (36$_H$)	1 (Connected.)
Initialization data No. designation (34$_H$)	2006 (No.2006)	Callback function designation (2001$_H$)	—

```
* Initial processing
                                                              <Turn on QJ71C24 accesible    >
         X1E      X1F
    0   ──┤├──────┤/├───────────────────────────────────────────────────────────────( M0    )
        QJ71C24  WDT erro                                                              QJ71C24
        ready    r                                                                     accessib
                                                                                       le

                                                              <Turn on initialization enabled >
         M0       M3      X10      X12      X13      Y10
   19   ──┤├──────┤/├─────┤/├──────┤/├──────┤/├──────┤/├──────────────────────────────( M30   )
        QJ71C24  Initiali Initiali Connecti Abnormal Initiali                          Initiali
        accessib zation c zation c on in pr complet zation r                          zation e
        le       ompletio ompletio ogress   ion      equest                           nabled
                 n flag   n

                                                              <Set modem connection channel No >
         M0
   43   ──┤├───────┬───────────────────────────────[TOP    H0      H2E     K1      K1    ]
        QJ71C24    │
        accessib   │
        le         │
                   │                                          <Set GX Developer connection     >
                   │
                   └───────────────────────────────[TOP    H0      H36     K1      K1    ]

* Convert the initialization command into pulse
                                                              <Initialization command into puls>
        SM400
   88   ──┤├─────────────────────────────────────────────────────────[PLS    M31    ]
        Turning                                                                Initiali
        on alway                                                               zation c
        s                                                                      ommand i
                                                                               nto puls

                                                              <Set the Data for initialization >
         M31      M30
  110   ──┤├──────┤├──────┬──────────────────────────[TOP    H0      H34     K2006   K1    ]
        Initiali Initiali │
        zation c zation e │
        ommand i nabled   │
        nto puls          │
                          │                                   <Turn on initialization request  >
                          │
                          ├───────────────────────────────────────────[SET    Y10    ]
                          │                                                     Initiali
                          │                                                     zation r
                          │                                                     equest
                          │
                          │                                   <Turn on initial request flag     >
                          │
                          └───────────────────────────────────────────[SET    M39    ]
                                                                               Initial
                                                                               request
                                                                               flag
```

↓
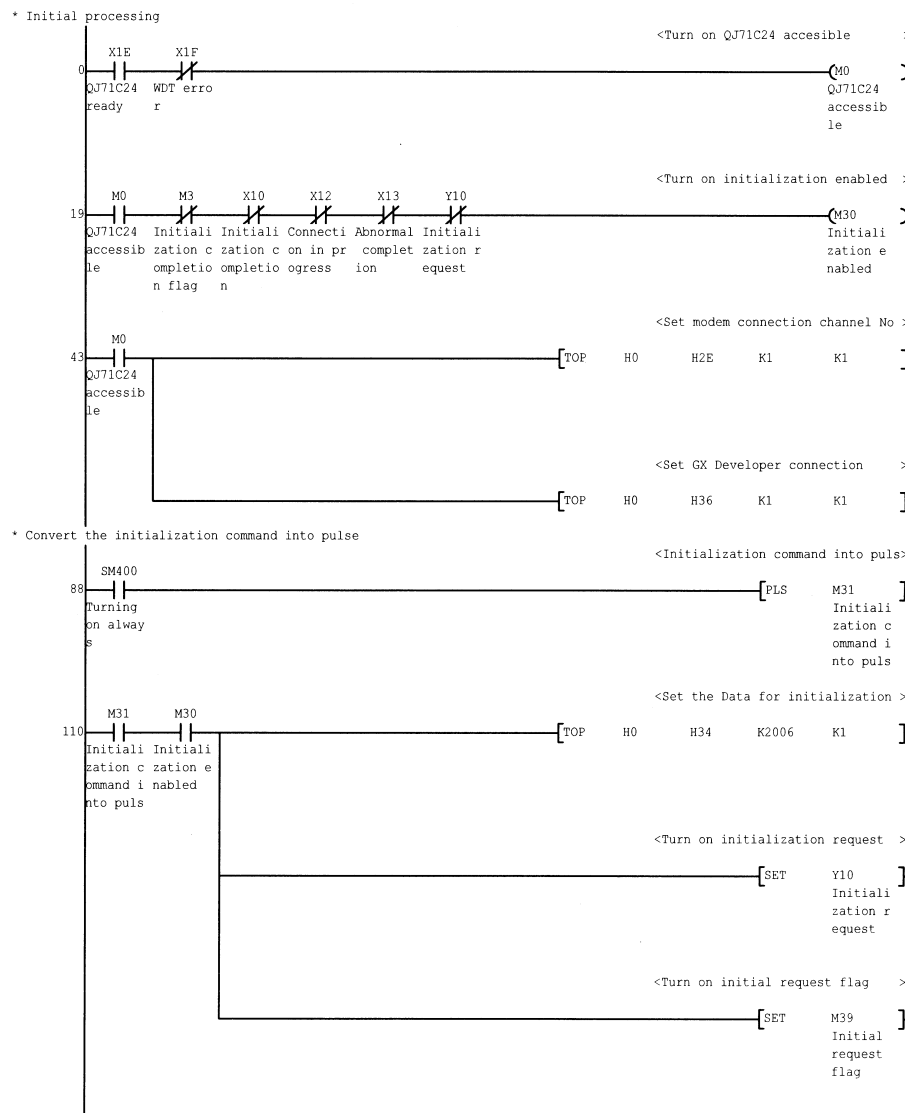
(To the next page)

POINT

This sample sequence program is installed into the following folders after installation of MX Component.

[User-specified folder]-[Act]-[Sample]-[Gppw]-[QJ71C24TEL]

(From the Preceding page)

↓

```
                                                    <Turn on initialize completion  >
       Y10    X10
170   ─┤ ├───┤ ├────────────────────────────────────[SET    M3         ]
     Initiali Initiali                                      Initiali
     zation r zation c                                      zation c
     equest   ompletio                                      ompletio
              n                                             n flag

                                                    <Turn off initialization request >
            ─────────────────────────────────────────[RST    Y10        ]
                                                            Initiali
                                                            zation r
                                                            equest


209  ───────────────────────────────────────────────[END        ]
```

2) When "Auto line connect (Callback fixation)" is used as callback function

Setting Item (Buffer Memory Address)	Settings
Modem connection channel designation (2E$_H$)	1 (CH1)
Initialization data No. designation (34$_H$)	2012 (No.2012)

Setting Item (Buffer Memory Address)	Settings
GX Developer connection designation (36$_H$)	1 (Connected.)
Callback function designation (2001$_H$)	9$_H$ (Auto line connect (Callback fixation))

```
* Initial processing
                                                              <Turn on QJ71C24 accessible    >
        X1E      X1F                                                                  (M0        )
    0   ┤├──────┤/├──────────────────────────────────────────────────────────────────  M0
        QJ71C24  WDT erro                                                              QJ71C24
        ready    r                                                                     accessib
                                                                                       le

                                                              <Turn on initialization enabled >
        M0       M3       X10      X12      X13      Y10                               (M30       )
   19   ┤├──────┤/├──────┤/├──────┤/├──────┤/├──────┤/├────────────────────────────── M30
        QJ71C24  Initiali Initiali Connecti Abnormal Initiali                          Initiali
        accessib zation c zation c on in pr complet zation r                          zation e
        le       ompletio ompletio ogress   ion      equest                           nabled
                 n flag   n

                                                              <Set modem connection channel No >
        M0
   43   ┤├──────┬──────────────────────────────────────────[TOP    H0     H2E    K1     K1    ]
        QJ71C24 │
        accessib│
        le      │                                            <Set GX Developer connection     >
                │
                ├──────────────────────────────────────────[TOP    H0     H36    K1     K1    ]
                │
                │                                            <Set callback function           >
                │
                ├──────────────────────────────────────────[TO     H0     H2001  H9     K1    ]
                │
                │                                            <Set data for callback           >
                │
                ├──────────────────────────────────────────[TO     H0     H2101  H8001  K1    ]
                │
                │                                            <Set registration data bytes     >
                │
                ├──────────────────────────────────────────[TO     H0     H1B00  K80    K1    ]
                │
                │                                            <Set telephone number            >
                │
                ├──────────────────────────────────────────[$MOV   "000000          "   D1    ]
                │
                │                                            <Set "no external-line"          >
                │
                ├──────────────────────────────────────────────────[MOV    K255   D10   ]
                │
                │                                            <Set line type                   >
                │
                ├──────────────────────────────────────────────────[MOV    K1     D11   ]
                │
                │                                            <Writes the connection data      >
                │
                └──────────────────────────────────────────[TO     H0     H1B01  D0     K40   ]

* Convert the initialization command into pulse
                                                              <Initialization command into puls>
        SM400
  217   ┤├──────────────────────────────────────────────────────────[PLS    M31          ]
        Turning                                                             Initiali
        on alway                                                           zation c
        s                                                                  ommand i
                                                                           nto puls
```

↓

(To the next page)

┌───┐
│ POINT   │
├───┤
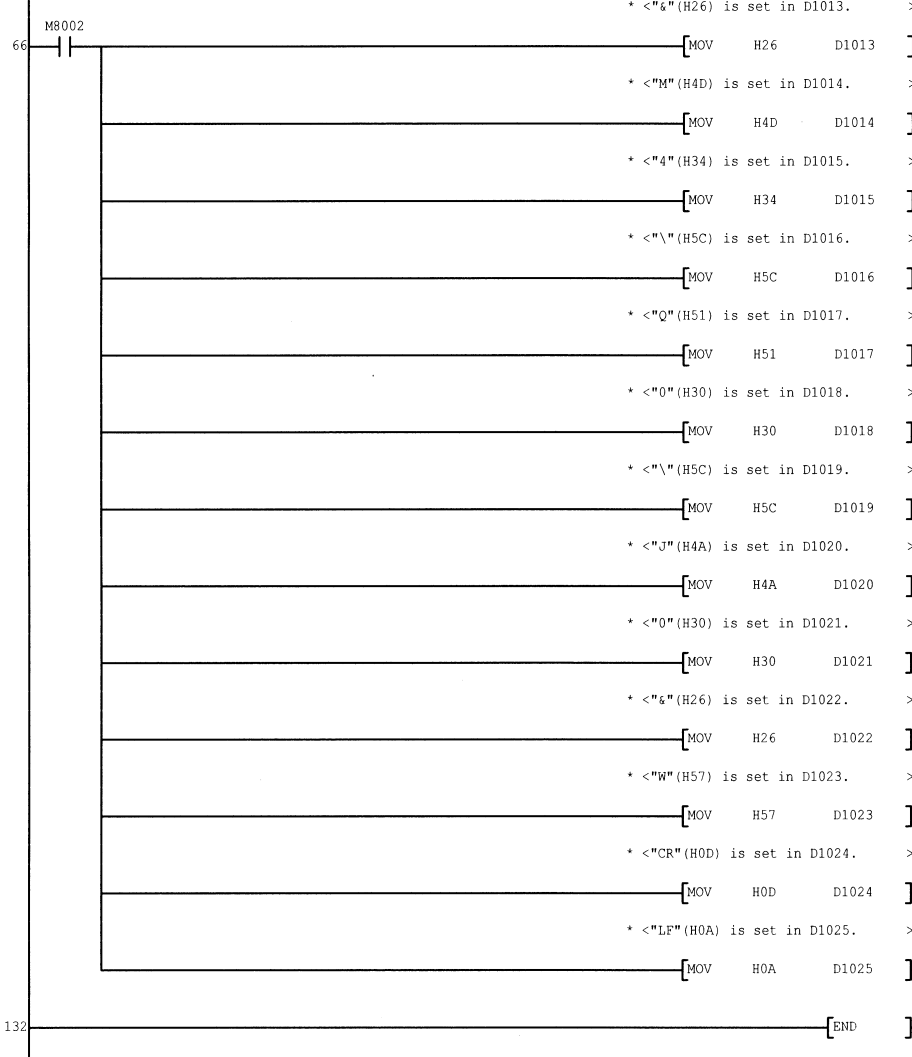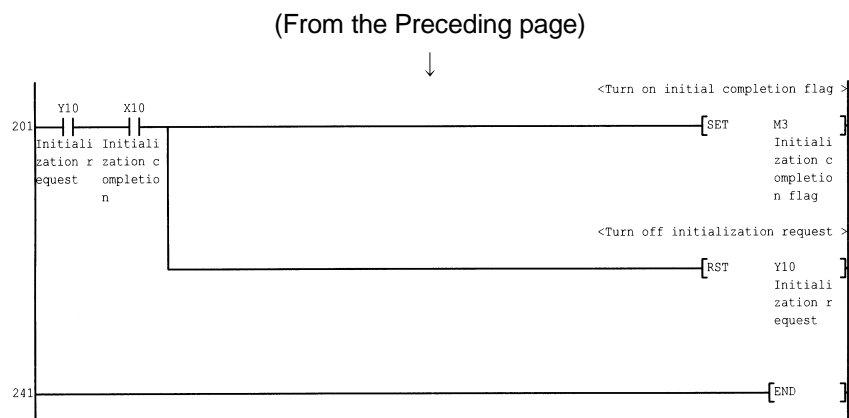│ This sample sequence program is installed into the following folders after│
│ installation of MX Component.   │
│ [User-specified folder]-[Act]-[Sample]-[Gppw]-[QJ71C24Callback]   │
└───┘

(From the Preceding page)
↓

```
                                                           <Set the Data for initialization >
      M31       M30
239 ──┤├────────┤├───────────────────────────────┤TOP    H0      H34     K2012     K1        ┤
    Initiali  Initiali
    zation c  zation e
    ommand i  nabled
    nto puls
                                                           <Turn on initialization request >
                                                  ┤SET     Y10                                ┤
                                                           Initiali
                                                           zation r
                                                           equest

                                                           <Turn on initial request flag    >
                                                  ┤SET     M39                                ┤
                                                           Initial
                                                           request
                                                           flag

                                                           <Turn on initialize completion   >
      Y10       X10
299 ──┤├────────┤├─────────────────────────────────┤SET    M3                                ┤
    Initiali  Initiali                                      Initiali
    zation r  zation c                                      zation c
    equest    ompletio                                      ompletio
              n                                             n flag

                                                           <Turn off initialization request >
                                                  ┤RST     Y10                                ┤
                                                           Initiali
                                                           zation r
                                                           equest

338 ─────────────────────────────────────────────┤END                                       ┤
```

3) When "Auto line connect (Callback number specification (max. 10 units))" is used as callback function

Setting Item (Buffer Memory Address)	Settings
Modem connection channel designation (2E$_H$)	1 (CH1)
Initialization data No. designation (34$_H$)	2012 (No.2012)

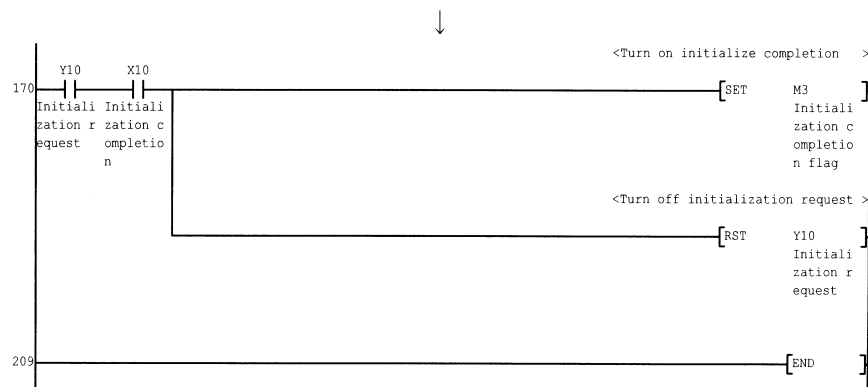| Setting Item (Buffer Memory Address)	Settings
GX Developer connection designation (36$_H$)	1 (Connected.)
Callback function designation (2001$_H$)	F$_H$ (Auto line connect (Callback number specification (max. 10 units)))

```
* Initial processing
                                                    <Turn on QJ71C24 accessible    >
      X1E      X1F
  0 ──┤├──────┤/├────────────────────────────────────────────────────────────(M0    )─
    QJ71C24  WDT erro                                                          QJ71C24
    ready    r                                                                 accessib
                                                                               le

                                                    <Turn on initialization enabled >
      M0      M3      X10     X12     X13     Y10
 19 ──┤├──────┤/├─────┤/├─────┤/├─────┤/├─────┤/├──────────────────────────────(M30   )─
    QJ71C24  Initiali Initiali Connecti Abnormal Initiali                      Initiali
    accessib zation c zation c on in pr complet  zation r                      zation e
    le       ompletio ompletio ogress   ion      equest                        nabled
             n flag   n
```

↓

(To the next page)

POINT

This sample sequence program is installed into the following folders after installation of MX Component.
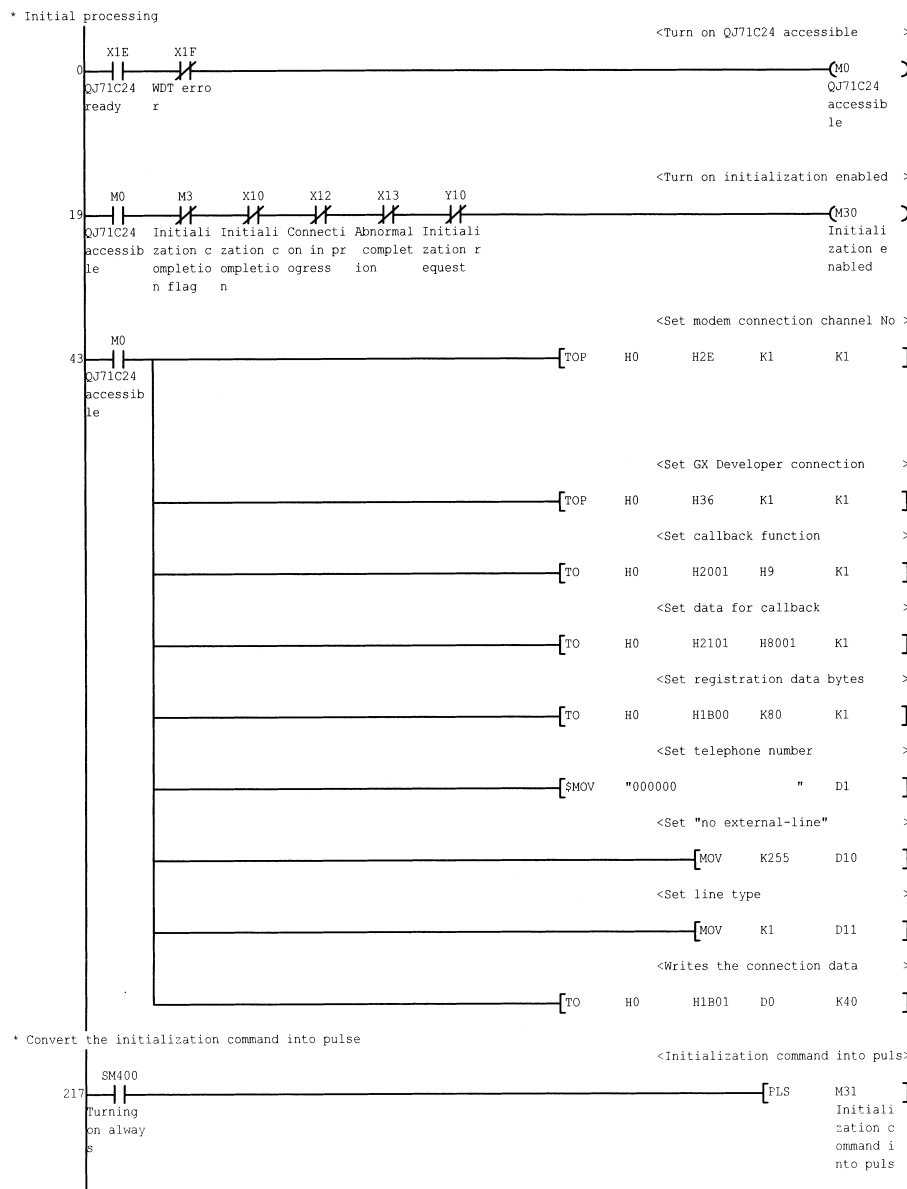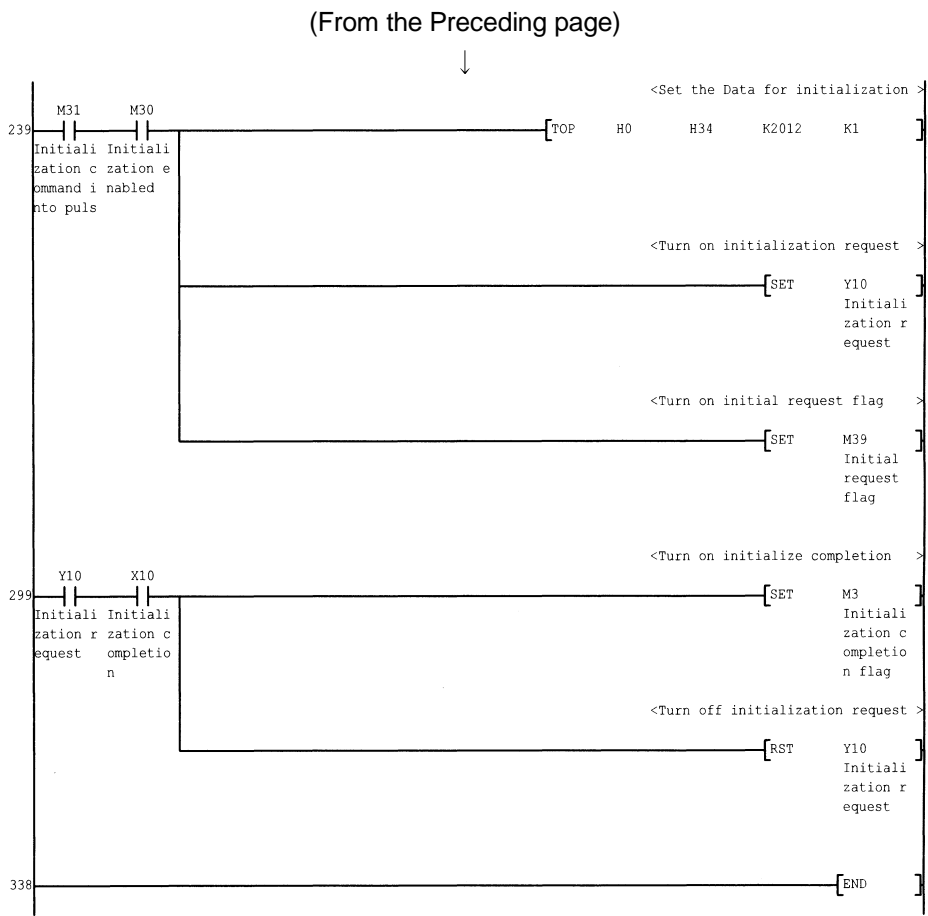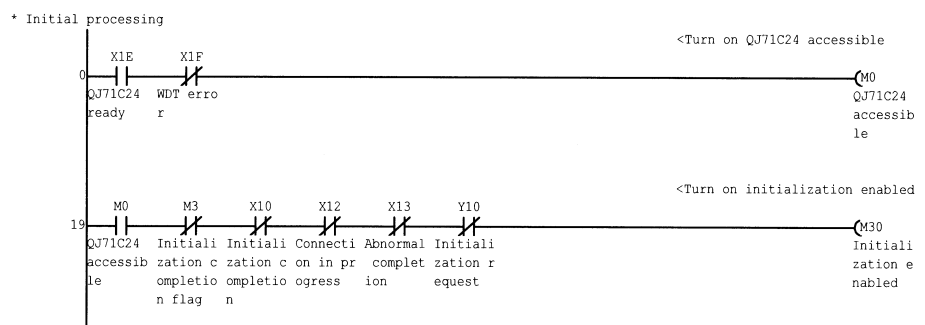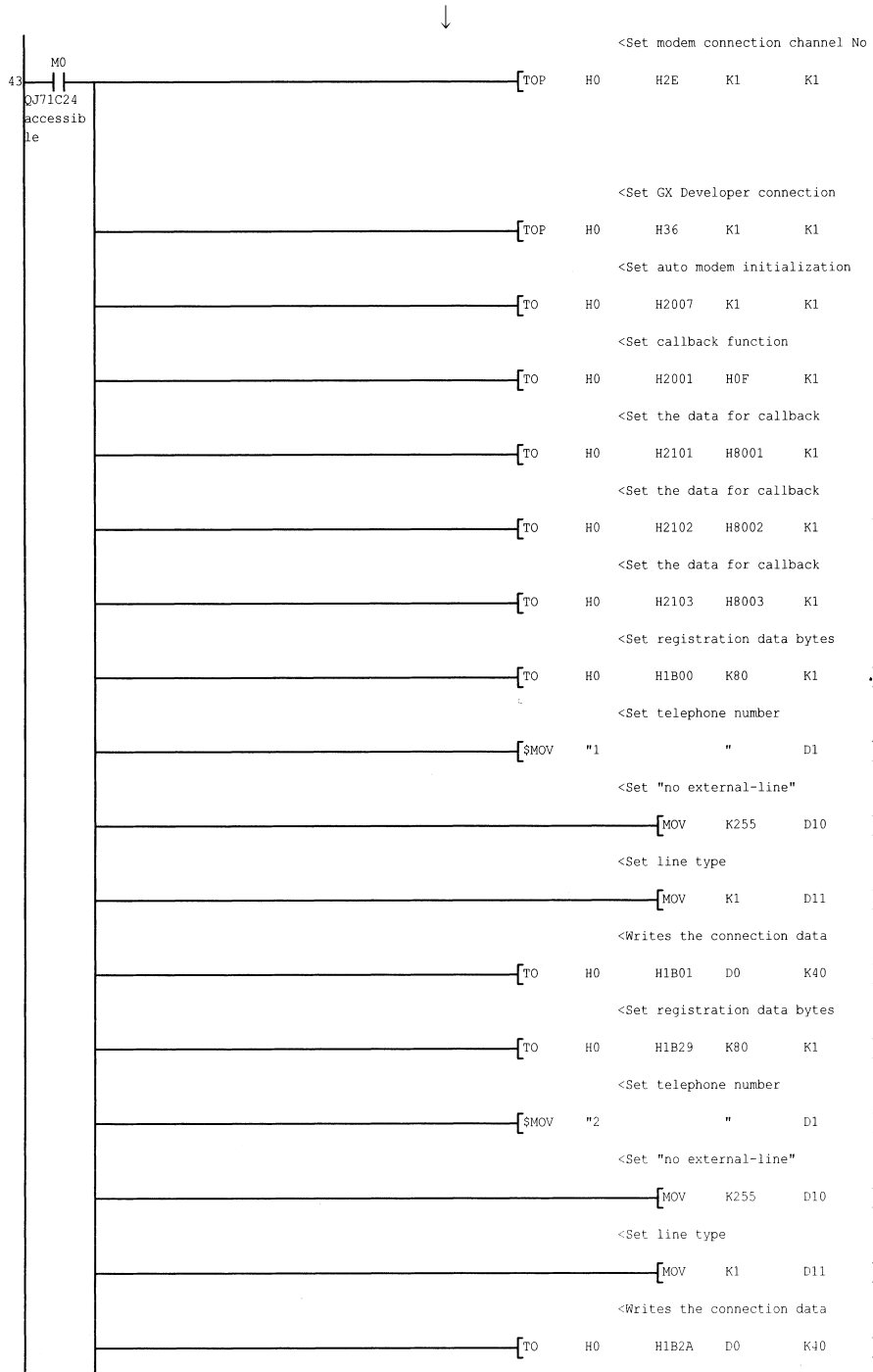
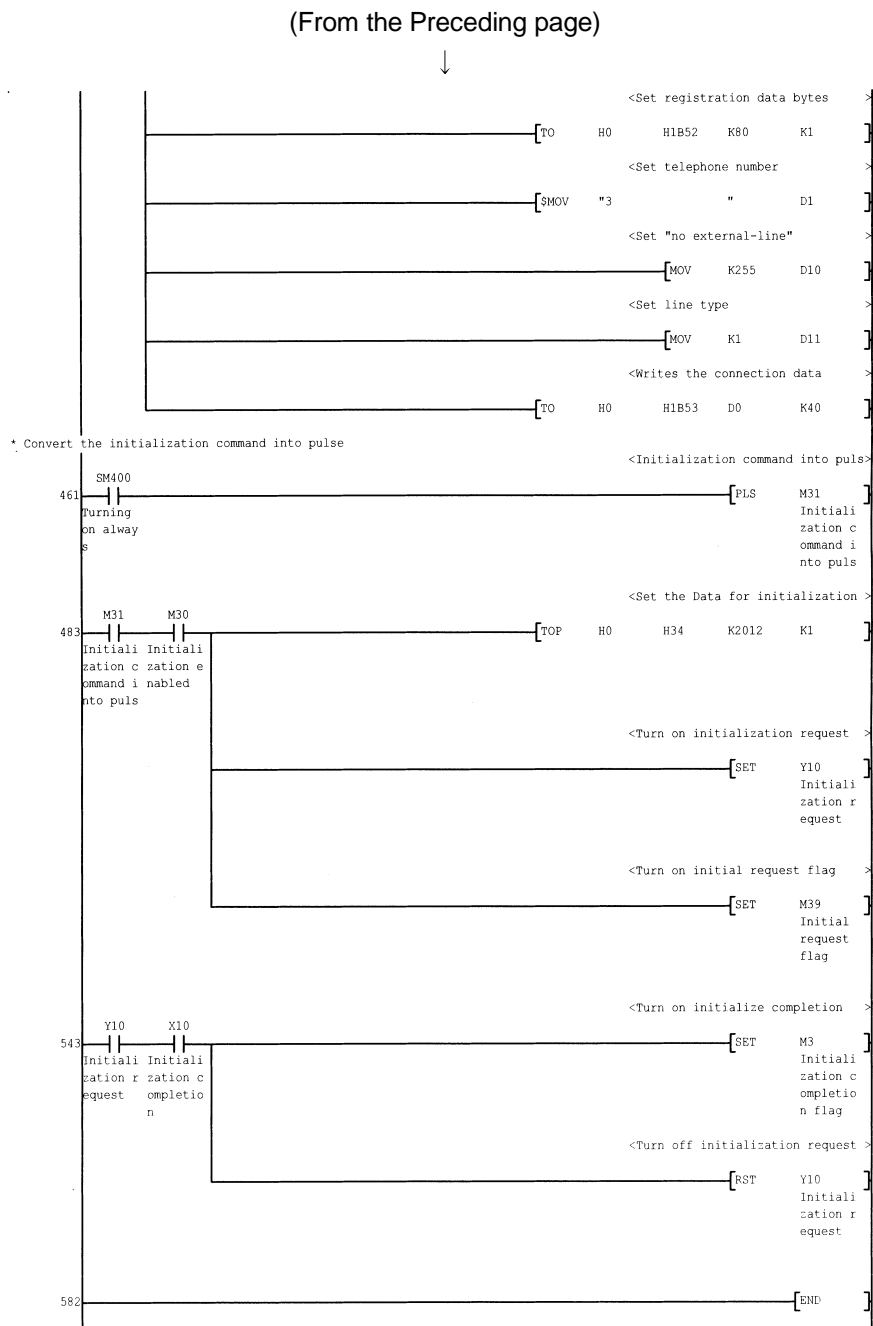[User-specified folder]-[Act]-[Sample]-[Gppw]-[QJ71C24CallbackNumber]

(From the Preceding page)

↓

```
                                                    <Set modem connection channel No >
     M0
43 ──┤├──────────────────────────────────[TOP    H0      H2E      K1      K1    ]
  QJ71C24
  accessib
  le
                                                    <Set GX Developer connection     >
     ├──────────────────────────────────[TOP    H0      H36      K1      K1    ]
                                                    <Set auto modem initialization   >
     ├──────────────────────────────────[TO     H0      H2007    K1      K1    ]
                                                    <Set callback function           >
     ├──────────────────────────────────[TO     H0      H2001    H0F     K1    ]
                                                    <Set the data for callback       >
     ├──────────────────────────────────[TO     H0      H2101    H8001   K1    ]
                                                    <Set the data for callback       >
     ├──────────────────────────────────[TO     H0      H2102    H8002   K1    ]
                                                    <Set the data for callback       >
     ├──────────────────────────────────[TO     H0      H2103    H8003   K1    ]
                                                    <Set registration data bytes     >
     ├──────────────────────────────────[TO     H0      H1B00    K80     K1    ]
                                                    <Set telephone number            >
     ├──────────────────────────────[$MOV    "1              "       D1          ]
                                                    <Set "no external-line"          >
     ├────────────────────────────────────────[MOV    K255     D10    ]
                                                    <Set line type                   >
     ├────────────────────────────────────────[MOV    K1       D11    ]
                                                    <Writes the connection data      >
     ├──────────────────────────────────[TO     H0      H1B01    D0      K40   ]
                                                    <Set registration data bytes     >
     ├──────────────────────────────────[TO     H0      H1B29    K80     K1    ]
                                                    <Set telephone number            >
     ├──────────────────────────────[$MOV    "2              "       D1          ]
                                                    <Set "no external-line"          >
     ├────────────────────────────────────────[MOV    K255     D10    ]
                                                    <Set line type                   >
     ├────────────────────────────────────────[MOV    K1       D11    ]
                                                    <Writes the connection data      >
     ├──────────────────────────────────[TO     H0      H1B2A    D0      K40   ]
```

↓

(To the next page)

(From the Preceding page)

↓

```
                                                        <Set registration data bytes   >
                                          ─[TO      H0      H1B52    K80      K1      ]
                                                        <Set telephone number          >
                                          ─[$MOV    "3               "        D1      ]
                                                        <Set "no external-line"        >
                                              ─[MOV    K255             D10    ]
                                                        <Set line type                 >
                                              ─[MOV    K1               D11    ]
                                                        <Writes the connection data    >
                                          ─[TO      H0      H1B53    D0       K40     ]
```

* Convert the initialization command into pulse

```
                                                        <Initialization command into puls>
       SM400
461 ───┤ ├──────────────────────────────────────────────[PLS      M31     ]
    Turning                                                     Initiali
    on alway                                                    zation c
    s                                                           ommand i
                                                                nto puls

                                                        <Set the Data for initialization >
       M31     M30
483 ───┤ ├─────┤↑├────────────────────────────[TOP     H0      H34      K2012    K1      ]
    Initiali Initiali
    zation c zation e
    ommand i nabled
    nto puls

                                                        <Turn on initialization request >
                                              ─[SET     Y10    ]
                                                                Initiali
                                                                zation r
                                                                equest

                                                        <Turn on initial request flag    >
                                              ─[SET     M39    ]
                                                                Initial
                                                                request
                                                                flag

                                                        <Turn on initialize completion   >
       Y10     X10
543 ───┤ ├─────┤ ├──────────────────────────────────────[SET     M3     ]
    Initiali Initiali                                            Initiali
    zation r zation c                                            zation c
    equest   ompletio                                            ompletio
             n                                                   n flag

                                                        <Turn off initialization request >
                                              ─[RST     Y10    ]
                                                                Initiali
                                                                zation r
                                                                equest

582 ─────────────────────────────────────────────────────[END     ]
```

(5)   Setting the Logical station number (Setting on communication
setting wizard)
This section describes the setting of the logical station number using the Q
series-compatible C24 system example.
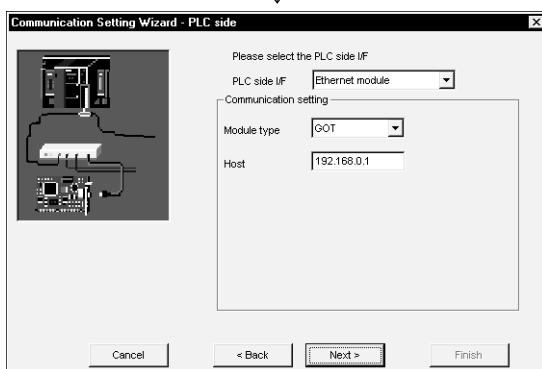
1) Start the communication setup utility and choose the
communication setting wizard.

2) Type "12" in Logical station number and click the Next>
button.
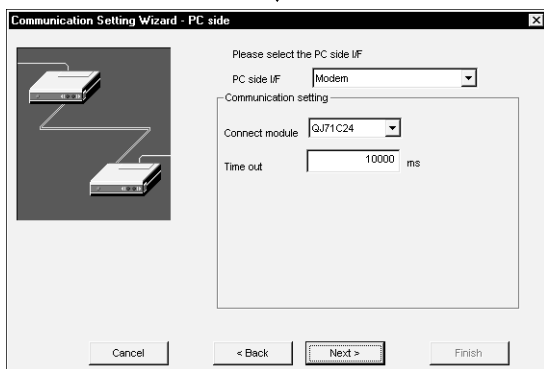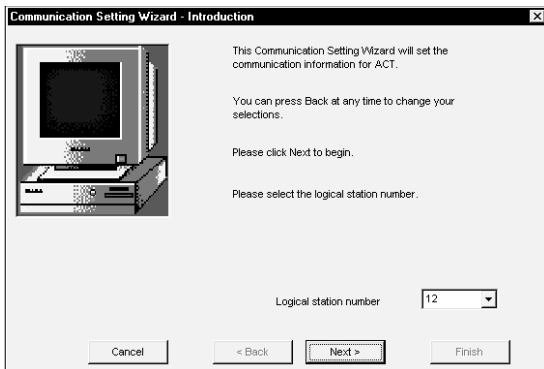
3) Make settings as indicated below and click the Next>
button.

PC side I/F   : Modem
Connect module   : QJ71C24
Time out   : 10000
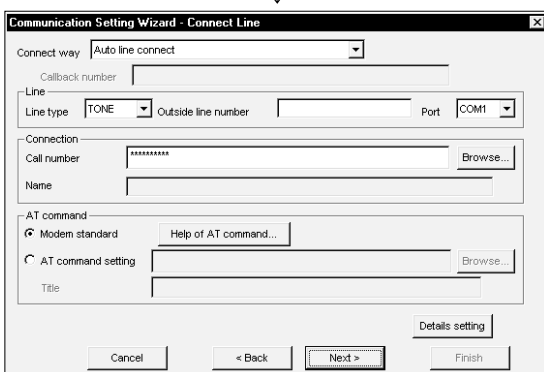
4) Make settings as indicated below and click the Next>
button.

Line type   : Tone
Outside line number   : None
Port   : COM1
Call number   : **********
(Enter the PLC side phone
number.)
AT command   : Modem standard

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↓
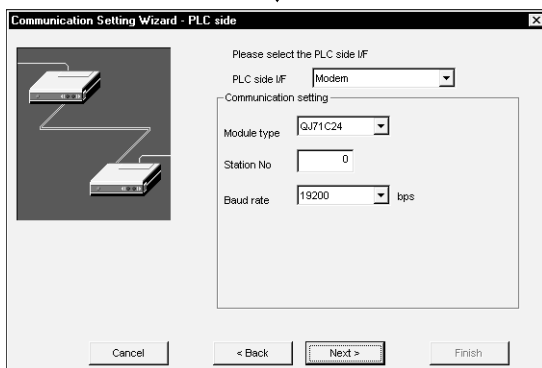
5) Make settings as indicated below and click the |Next>| button.

PLC side I/F   : Modem
Module type   : QJ71C24
Station No   : 0
Baudrate   : 19200
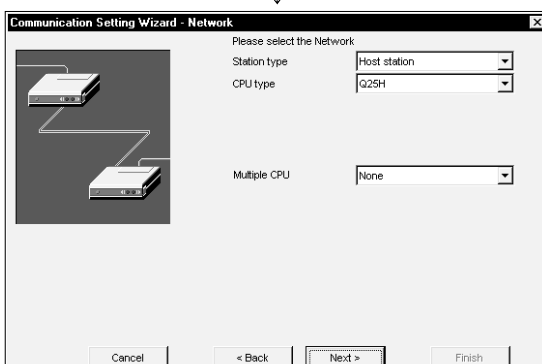
↓

6) Make settings as indicated below and click the |Next>| button.

Station type   : Host station
CPU type   : Q25H
Multiple CPU   : None
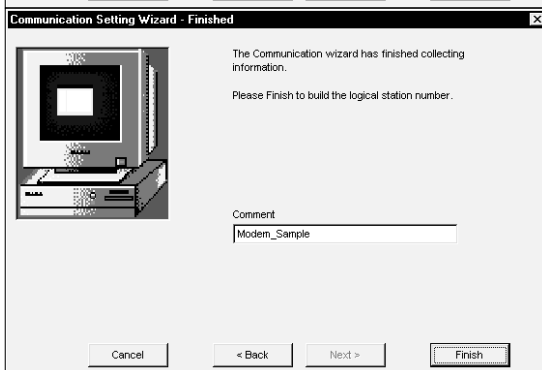
7) Enter a comment and click the |Finish| button.

↓

(Registration complete)

(6) Checking the logical station number settings (Conducting a communication test)

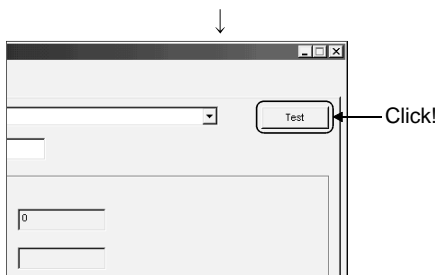Check whether modem communication settings are correct or not, using the logical station number set in (5).
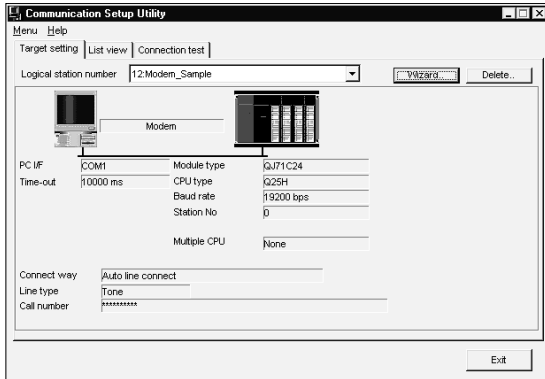
1) Display the "Target setting" tab screen and choose the logical station number "12".
Check whether the logical station number settings are correct or not.
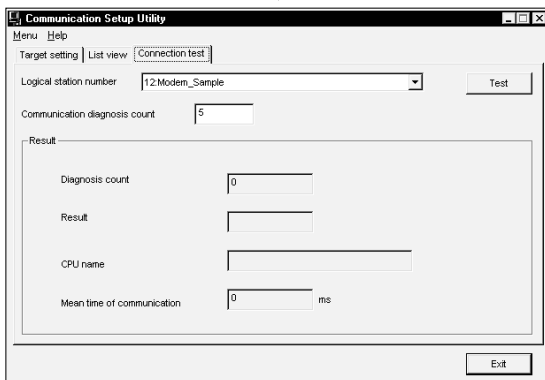
↓

2) Display the "Connection test" tab screen and set the logical station number "12".

↓

— Click!

3) Click the Test button to check that communication is being performed normally.
If an error occurred, check the error code and remove the error. The error code occurs in Result. (At normal termination, "0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings were correct.
This logical station number is made applicable by user program creation and PLC monitor utility.
Collect device data, using this logical station number.

6.13 Gateway Function Communication

This section describes the gateway function communication procedure and setting example for the utility setting type.

6.13.1 Access procedure

This section explains the procedure for accessing the GOT using gateway function communication in the following flowchart.

```
                         ┌──────────────┐
                         │    Start     │
                         └──────┬───────┘
                                │
        ┌───────────────────────────────────────────┐
        │ Set the GOT.                               │ ┐
        └──────────────────┬────────────────────────┘ │
                           │                           │ · · · Refer to the GOT
        ┌───────────────────────────────────────────┐ │       Operating Manual.
        │ Connect the GOT to Ethernet.               │ ┘
        └──────────────────┬────────────────────────┘
                           │
        ┌───────────────────────────────────────────┐
        │ Connect the IBM-PC/AT compatible to Ethernet.│
        └──────────────────┬────────────────────────┘
                           │
        ┌───────────────────────────────────────────┐
        │ Edit the HOSTS file. *1                    │
        └──────────────────┬────────────────────────┘
                           │
        ┌───────────────────────────────────────────┐
        │ Start the communication settings utility and make │ · · · · Refer to 6.13.1 (3)
        │ settings using the communication settings wizard. │
        └──────────────────┬────────────────────────┘
                           │
        ┌───────────────────────────────────────────┐
        │ Check whether normal communication can be made │ · · · · Refer to 6.13.1 (4)
        │ on the communication test screen. *1       │
        └──────────────────┬────────────────────────┘
                           │
                         ┌──────────────┐
                         │     End      │
                         └──────────────┘
```
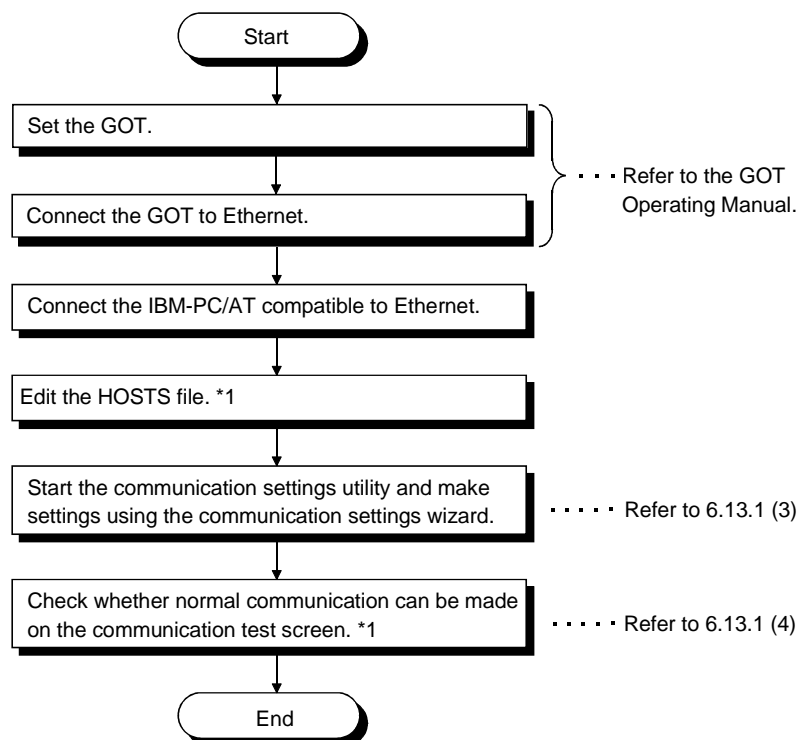
∗1: The HOSTS file need not be edited when the IP address is entered into the host name of the communication settings utility and the ActHostAddress property of the gateway function communication control.

(1) System examples
The following system examples are used in this section.

IBM-PC/AT compatible (MX Component)
Use "15" as logical station number.

Ethernet
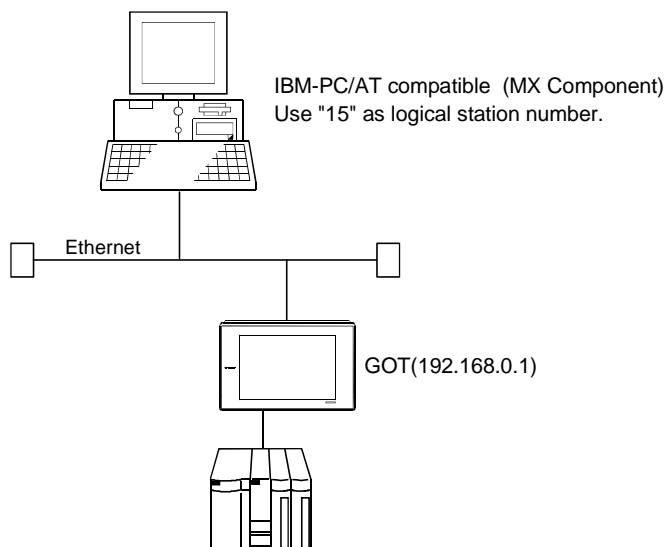
GOT(192.168.0.1)

(2) Checking communication
After completion of preparations for making gateway function communication,
execute ping in the MS-DOS mode before starting communication using MX
Component.

When normal

C:\>ping 192.168.0.1

Reply from 192.168.0.1 : bytes=32 time<10ms TTL=32

When abnormal

C:\>ping 192.168.0.1

Request timed out.

If ping does not pass through, check the settings of the GOT and the settings of
the Windows® side IP address and others.

(3)   Setting the Logical station number (Setting on communication setting wizard)

This section describes the setting of the logical station number using (1) system example.

1) Start the communication setup utility and choose the communication setting wizard.

2) Type "13" in Logical station number and click the $\boxed{\text{Next>}}$ button.
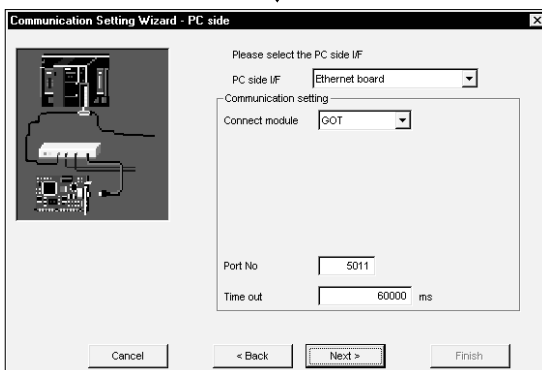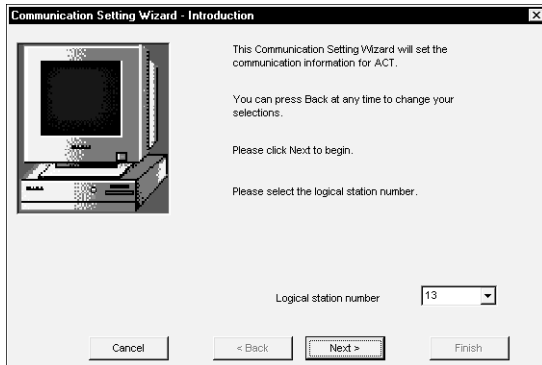
3) Make settings as indicated below and click the $\boxed{\text{Next>}}$ button.

PC side I/F	: Ethernet board
Connect module	: GOT
Port No	: 5011
Time out	: 60000

4) Make settings as indicated below and click the $\boxed{\text{Next>}}$ button.

PLC side I/F	: Ethernet board
Module type	: GOT
Host	: 192.168.0.1

↓

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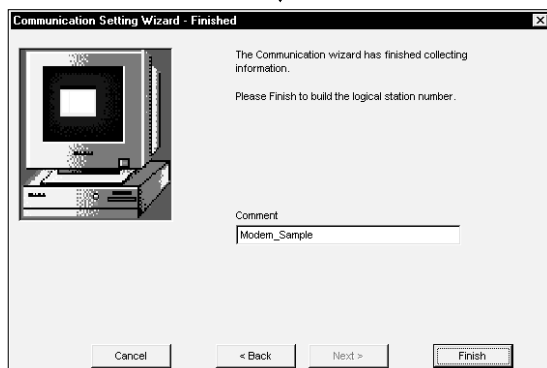
↓

5) Enter a comment and click the Finish button.

↓

(Registration complete)

(4)   Checking the logical station number settings (Conducting a communication test)
Check whether gateway function communication settings are correct or not, using the logical station number set in (3).
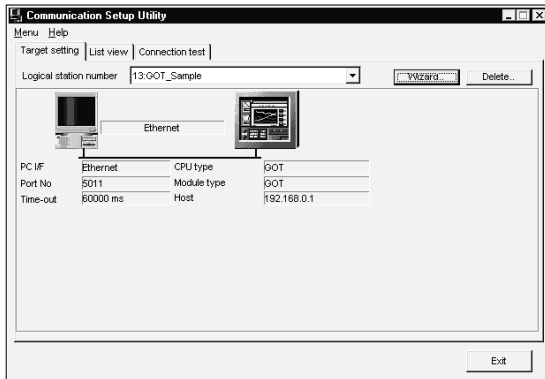
1) Display the "Target setting" tab screen and choose the logical station number "13".
Check whether the logical station number settings are correct or not.
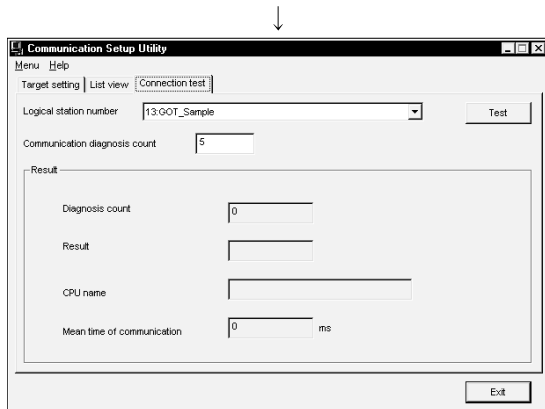
↓

2) Display the "Connection test" tab screen and set the logical station number "13".

↓

← Click!

3) Click the [Test] button to check that communication is being performed normally.
If an error occurred, check the error code and remove the error. The error code occurs in Result. (At normal termination, "0x00000000" appears in Result.)
Refer to the programming manual for error code details.

↓

(Communication test complete)

4) Through the above steps, it is confirmed that the logical station number settings were correct.
This logical station number is made applicable by user program creation and PLC monitor utility.
Collect device data, using this logical station number.

7 COMMUNICATION SETTING EXAMPLES OF THE PROGRAM SETTING TYPE

To make communication using the program setting type, you must set the properties of the corresponding ACT controls.

For the properties of the corresponding ACT controls, directly enter them in the property window or change their settings in the user program. the user program.

Refer to the MX Component programming manual for details of the properties which must be set for the corresponding ACT controls.

Refer to the following sections for the settings of the modules for use of MX Component.

- Computer link communication : Section 6.1.1
- Ethernet communication   : Section 6.2.1
- CC-Link G4 communication   : Section 6.8.1
- Modem communication   : Section 6.12.1

REMARK

On MX Component, the following property setting method is available for those who are not familiar with property setting.

<Property setting changing procedure>
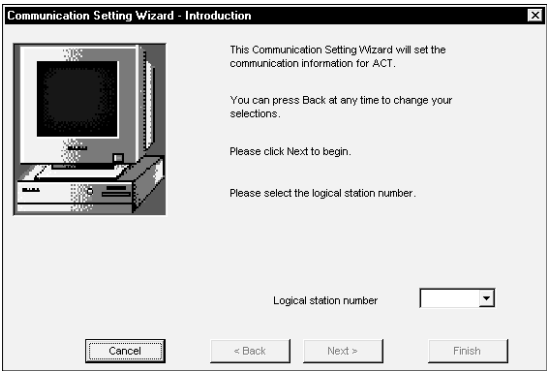
1) Specify the communication path where you want to make property setting using the "Communication Setting Wizard" on the communication setup utility.
   For details of the communication setting wizard, refer to "Section 5.1.6 Operations on the communication setting wizard screen".

↓
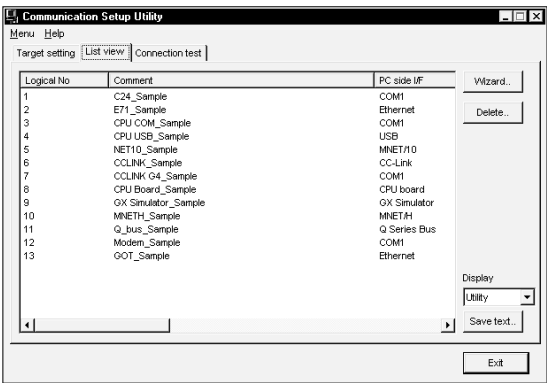
2) Display the "List view" screen of the communication setup utility.
   For details of the "List view" screen, refer to "Section 5.1.2 Operations on list view screen".

↓

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↓

Click!

↓
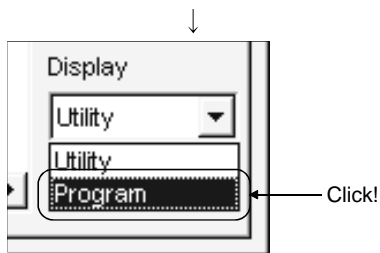
3) Choose "Program" in "Display" on the "List view" screen.
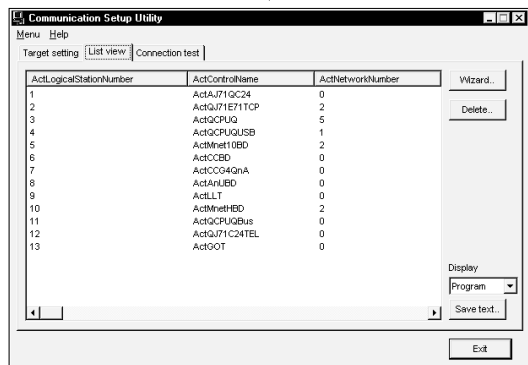
4) Control the scroll bar on the "List view" screen to confirm the properties.
The "List view" screen shows the properties that are needed for setting using the program setting type.

Saved into file in txt format.
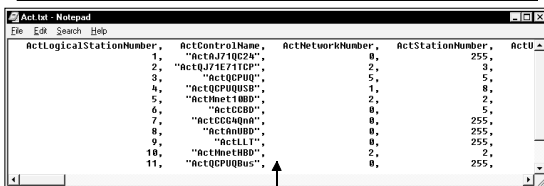
Clicking the ⌊Save text⌋ button on the "List view" screen enables you to save the data into a file in the txt format.

↓
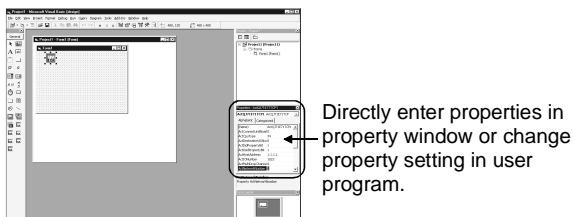
Directly enter properties in property window or change property setting in user program.

5) When creating a user program, directly enter the confirmed property values into Properties of the property window or change the property setting in the user program.
The screen used for explanation uses Visual Basic® .

8 ACCESSIBLE DEVICES AND RANGES

This chapter describes the accessible devices and accessible ranges in each communication form.

8.1 Precautions for Device Access

(1) About accessible devices
For accessible devices, the devices not given or devices marked $\times$ (inaccessible) in the accessible device list indicated in Sections 8.2 and later are not supported by MX Component.
Do not specify the inaccessible devices.

(2) Precautions for making access to extended file registers
It is possible (depending on the type of memory cassette mounted on the PLC CPU) that no errors will occur even when a device is read and written by specifying a block number which does not exist. In such a case, the data read is not correct. Further, writing to that device may destroy the user memory of the PLC CPU.
Make sure to use the function described here, after fully confirming the kind of memory cassette, details of parameter setting, etc.
For details, refer to the AnACPU and AnUCPU User's Manual.

8

8.2 For Computer Link Communication

This section provides the accessible devices and accessible ranges for computer link communication.

8.2.1 Accessible devices

The following table indicates the accessible devices for computer link communication.

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
								Access Target		
Function input (FX)		×	×	×	×	×		○	×	×
Function output (FY)		×	×	×	×	×		○	×	×
Function register (FD)		×	×	×	×	×		○	×	×
Special relay (SM)		○	○	○	○	○		○	×	○
Special register (SD)		○	○	○	○	○		○	×	○
Input relay (X)		○	○	○	○	○		○	×	○
Output relay (Y)		○	○	○	○	○		○	×	○
Internal relay (M)		○	○	○	○	○		○	×	○
Latch relay (L)		○	○	○	○	○		○	×	○
Annunciator (F)		○	○	○	○	○		○	×	○
Edge relay (V)		×	×	×	×	×		○	×	×
Link relay (B)		○	○	○	○	○		○	×	○
Data register (D)		○	○	○	○	○		○	×	○
Link register (W)		○	○	○	○	○		○	×	○
Timer	Contact (TS)	○	○	○	○	○		○	×	○
	Coil (TC)	○	○	○	○	○		○	×	○
	Present value (TN)	○	○	○	○	○		○	×	○
Counter	Contact (CS)	○	○	○	○	○		○	×	○
	Coil (CC)	○	○	○	○	○		○	×	○
	Present value (CN)	○	○	○	○	○		○	×	○
Retentive timer	Contact (SS)	×	×	×	×	×		○	×	×
	Coil (SC)	×	×	×	×	×		○	×	×
	Present value (SN)	×	×	×	×	×		○	×	×
Link special relay (SB)		×	×	×	×	×		○	×	×
Link special register (SW)		×	×	×	×	×		○	×	×
Step relay (S)		○	○	○	○	○		×	×	○
Direct input (DX)		×	×	×	×	×		×	×	×
Direct output (DY)		×	×	×	×	×		×	×	×
Accumulator (A)		○	○	○	○	○		×	×	○
Index register	(Z)	○	○	○	○	○		○	×	○
	(V)	○	○	○	○	○		×	×	○
File register	(R)	○	○	○	○	○		○ ＊1	×	○
	(ZR)	×	×	×	×	×		○ ＊1	×	×
Extended file register (ER＊\R)		○	○	○	○	○		×	×	○

＊1: Disabled for use of Q00JCPU

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
							Access Target			
Direct link	Link input (J∗\X)	×	×	×	×	×	○		×	×
	Link output (J∗\Y)	×	×	×	×	×	○		×	×
	Link relay (J∗\B)	×	×	×	×	×	○		×	×
	Link special relay (J∗\SB)	×	×	×	×	×	○		×	×
	Link register (J∗\W)	×	×	×	×	×	○		×	×
	Link special register (J∗\SW)	×	×	×	×	×	○		×	×
Special direct buffer memory (U∗\G)		×	×	×	×	×	○ ∗2		×	×

∗2: In a multi-CPU configuration, read from the shared memory of the host CPU cannot be performed.
   In addition, write to the shared memory cannot be performed independently of the host or other CPU.

8.2.2 Accessible ranges

This section indicates the accessible ranges for computer link communication.

(1) Configuration
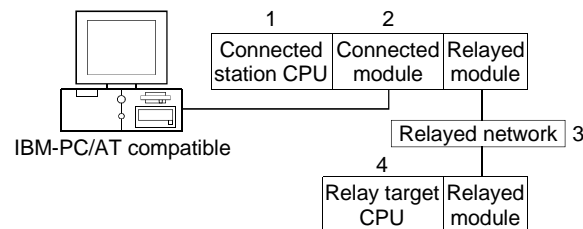
(2) Accessibility list
The following table indicates whether access can be made or not.
The connected station CPUs are all accessible.
Whether the relay target CPU is accessible or not is indicated by ○ (accessible) or × (inaccessible).

Connected Station		3. Relayed Network	4. Relay Target CPU					
1. CPU	2. Connected module (Usable control name)		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU *4
QCPU (Q mode)	Q series-compatible C24 *1 (ActQJ71C24, ActMLQJ71C24)	MELSECNET/H	○	×	×	×	×	×
		MELSECNET/10	○	○	○	○	×	○
		MELSECNET(II)	×	×	×	×	×	×
		Ethernet	○ *2	×	○ *2	×	×	×
		Computer link	○	×	○	×	×	×
		CC-Link	○	○	○	○	×	○
		Multidrop (Independent mode)	○	×	○	×	×	×
		Multidrop (Synchronous mode) *1	○	×	×	×	×	×
QnACPU	QC24(N) (ActAJ71QC24, ActMLAJ71QC24)	MELSECNET/H	×	×	×	×	×	×
		MELSECNET/10	×	×	○	×	×	×
		MELSECNET(II)	×	×	○	×	×	×
		Ethernet	×	×	○ *2	×	×	×
		Computer link	×	×	○	×	×	×
		CC-Link	×	×	○	×	×	×
		Multidrop (Independent mode)	×	×	○	×	×	×
		Multidrop (Synchronous mode)	×	×	○	×	×	×

*1: Always set the transmission specifications software switch setting "SW6 (sumcheck)" of the Q series-compatible C24 parameters to ON.

*2: Set the parameter-set values of the target station side QE71 to the network number and station number.
Also set the "MNET/10 routing information" of the QE71 parameter setting.
At that time, specify any of the IP address calculation system, table conversion system and combined system as the "MNET/10 routing system".

*4: Accessible to the A171SHCPU, A172SHCPU, A173UHCPU(-S1) or A273UHCPU(-S3) only

Connected Station			4. Relay Target CPU					
1. CPU	2. Connected module (Usable control name)	3. Relayed Network	QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU ∗4
QCPU (A mode), QnACPU ∗3, ACPU, motion controller CPU	UC24 (ActAJ71UC24, (ActMLAJ71UC24)	MELSECNET/H	✕	✕	✕	✕	✕	✕
		MELSECNET/10	✕	○	○ ∗3	○	✕	○
		MELSECNET(II)	✕	○	○ ∗3	○	✕	○
		Ethernet	✕	✕	✕	✕	✕	✕
		Computer link	✕	✕	✕	✕	✕	✕
		CC-Link	✕	✕	✕	✕	✕	✕
		Multidrop	✕	○	○ ∗3	○	✕	○
QCPU (A mode), QnACPU ∗3, ACPU, motion controller CPU	C24 (ActAJ71C24, ActMLAJ71C24)	MELSECNET/H	✕	✕	✕	✕	✕	✕
		MELSECNET/10	✕	○	○ ∗3	○	✕	○
		MELSECNET(II)	✕	○	○ ∗3	○	✕	○
		Ethernet	✕	✕	✕	✕	✕	✕
		Computer link	✕	✕	✕	✕	✕	✕
		CC-Link	✕	✕	✕	✕	✕	✕
		Multidrop	✕	○	○ ∗3	○	✕	○

∗3: Operates as the one equivalent to AnACPU.

∗4: Accessible to the A171SHCPU, A172SHCPU, A173UHCPU(-S1) or A273UHCPU(-S3) only

8.3 For Ethernet Communication

This section provides the accessible devices and accessible ranges for Ethernet communication.

8.3.1 Accessible devices

The following table indicates the accessible devices for Ethernet communication.

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
Function input (FX)		×	×	×	×	×	○ *2	×	×
Function output (FY)		×	×	×	×	×	○ *2	×	×
Function register (FD)		×	×	×	×	×	○ *2	×	×
Special relay (SM)		○	○	○	○	○	○	×	○
Special register (SD)		○	○	○	○	○	○	×	○
Input relay (X)		○	○	○	○	○	○	×	○
Output relay (Y)		○	○	○	○	○	○	×	○
Internal relay (M)		○	○	○	○	○	○	×	○
Latch relay (L)		○	○	○	○	○	○	×	○
Annunciator (F)		○	○	○	○	○	○	×	○
Edge relay (V)		×	×	×	×	×	○	×	×
Link relay (B)		○	○	○	○	○	○	×	○
Data register (D)		○	○	○	○	○	○	×	○
Link register (W)		○	○	○	○	○	○	×	○
Timer	Contact (TS)	○	○	○	○	○	○	×	○
	Coil (TC)	○	○	○	○	○	○	×	○
	Present value (TN)	○	○	○	○	○	○	×	○
Counter	Contact (CS)	○	○	○	○	○	○	×	○
	Coil (CC)	○	○	○	○	○	○	×	○
	Present value (CN)	○	○	○	○	○	○	×	○
Retentive timer	Contact (SS)	×	×	×	×	×	○	×	×
	Coil (SC)	×	×	×	×	×	○	×	×
	Present value (SN)	×	×	×	×	×	○	×	×
Link special relay (SB)		×	×	×	×	×	○	×	×
Link special register (SW)		×	×	×	×	×	○	×	×
Step relay (S)		○	○	○	○	○	×	×	○
Direct input (DX)		×	×	×	×	×	×	×	×
Direct output (DY)		×	×	×	×	×	×	×	×
Accumulator (A)		○ *1	○ *1	○ *1	○ *1	○ *1	×	×	○ *1
Index register	(Z)	○ *1	○ *1	○ *1	○ *1	○ *1	○	×	○ *1
	(V)	○ *1	○ *1	○ *1	○ *1	○ *1	×	×	○ *1
File register	(R)	○	○	○	○	○	○ *3	×	○
	(ZR)	×	×	×	×	×	○ *3	×	×
Extended file register (ER*\R)		○	○	○	○	○	×	×	○

*1: Disabled when E71 (TCP/IP) is used.
*2: Disabled when QE71 (TCP/IP) is used.
*3: Disabled for use of Q00JCPU

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
							Access Target			
Direct link	Link input (J∗\X)	×	×	×	×	×	○		×	×
	Link output (J∗\Y)	×	×	×	×	×	○		×	×
	Link relay (J∗\B)	×	×	×	×	×	○		×	×
	Link special relay (J∗\SB)	×	×	×	×	×	○		×	×
	Link register (J∗\W)	×	×	×	×	×	○		×	×
	Link special register (J∗\SW)	×	×	×	×	×	○		×	×
Special direct buffer memory (U∗\G)		×	×	×	×	×	○ ∗4		×	×

∗4: In a multi-CPU configuration, read from the shared memory of the host CPU cannot be performed.
   In addition, write to the shared memory cannot be performed independently of the host or other CPU.

8.3.2 Accessible ranges

This section indicates the accessible ranges for Ethernet communication.

(1) Configuration
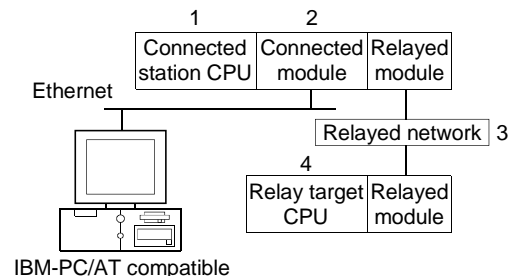
(2) Accessibility list
The following table indicates whether access can be made or not.
The connected station CPUs are all accessible.
Whether the relay target CPU is accessible or not is indicated by ○ (accessible)
or × (inaccessible).

```
POINT
```
When using the Q series-compatible E71 or QE71 (when UDP/IP is used), you
must set the Ethernet parameters in GX Developer parameter setting.

Connected Station			4. Relay Target CPU					
1. CPU	2. Connected module (Usable control name)	3. Relayed Network	QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU ∗6
QCPU (Q mode)	Q series-compatible E71 (ActQJ71E71TCP, ActMLQJ71E71TCP)	MELSECNET/H ∗1	○	×	×	×	×	×
		MELSECNET/10 ∗1	○	○	○	○	×	○
		MELSECNET(II)	×	×	×	×	×	×
		Ethernet	○ ∗2	×	○ ∗2	×	×	×
		Computer link	○	×	×	×	×	×
		CC-Link	○	×	×	×	×	×
QCPU (Q mode)	Q series-Compatible E71 (ActQJ71E71UDP, ActMLQJ71E71UDP)	MELSECNET/H ∗1	○	×	×	×	×	×
		MELSECNET/10 ∗1	○	○	○	○	×	○
		MELSECNET(II)	×	×	×	×	×	×
		Ethernet	○ ∗2	×	○ ∗2	×	×	×
		Computer link	○	×	×	×	×	×
		CC-Link	○	×	×	×	×	×

∗1: On the connected station side (Q series-compatible E71), always specify the station number set in the Ethernet parameter.

∗2: Set the parameter-set values of the target station side QE71 to the network number and station number.
  Also set the "MNET/10 routing information" of the QE71 parameter setting.
  At that time, specify any of the IP address calculation system, table conversion system and combined system as the "MNET/10 routing system".

∗6: Accessible to the A171SHCPU, A172SHCPU, A173UHCPU(-S1) or A273UHCPU(-S3) only

Connected Station			4. Relay Target CPU					
1. CPU	2. Connected module (Usable control name)	3. Relayed Network	QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU *6
QnACPU *5	QE71 (ActAJ71QE71TCP, ActMLAJ71QE71TCP)	MELSECNET/H	×	×	×	×	×	×
		MELSECNET/10	×	×	○ *5	×	×	×
		MELSECNET(II)	×	×	×	×	×	×
		Ethernet	×	×	×	×	×	×
		Computer link	×	×	×	×	×	×
		CC-Link	×	×	×	×	×	×
QnACPU	QE71 (ActAJ71QE71UDP, ActMLAJ71QE71UDP)	MELSECNET/H	×	×	×	×	×	×
		MELSECNET/10	×	×	○	×	×	×
		MELSECNET(II)	×	×	×	×	×	×
		Ethernet	×	×	○ *2*3	×	×	×
		Computer link	×	×	○ *3	×	×	×
		CC-Link	×	×	×	×	×	×
QCPU (A mode), QnACPU *4, ACPU, motion controller CPU	E71 (ActAJ71E71TCP, ActMLAJ71E71TCP)	MELSECNET/H	×	×	×	×	×	×
		MELSECNET/10	×	○	○ *4	○	×	○
		MELSECNET(II)	×	○	○ *4	○	×	○
		Ethernet	×	×	×	×	×	×
		Computer link	×	×	×	×	×	×
		CC-Link	×	×	×	×	×	×
QCPU (A mode), QnACPU *4, ACPU, motion controller CPU	E71 (ActAJ71E71UDP, ActMLAJ71E71UDP)	MELSECNET/H	×	×	×	×	×	×
		MELSECNET/10	×	○	○ *4	○	×	○
		MELSECNET(II)	×	○	○ *4	○	×	○
		Ethernet	×	×	×	×	×	×
		Computer link	×	×	×	×	×	×
		CC-Link	×	×	×	×	×	×

*2: Set the parameter-set values of the target station side QE71 to the network number and station number.
　　Also set the "MNET/10 routing information" of the QE71 parameter setting.
　　At that time, specify any of the IP address calculation system, table conversion system and combined system as the "MNET/10 routing system".

*3: Inaccessible when TCP/IP is selected.

*4: Operates as the one equivalent to AnACPU.

*5: CPU codes acquired are all 0x21.

*6: Accessible to the A171SHCPU, A172SHCPU, A173UHCPU(-S1) or A273UHCPU(-S3) only

8.4 For CPU COM Communication

This section provides the accessible devices and accessible ranges for CPU COM communication.

8.4.1 Accessible devices

The following table indicates the accessible devices for CPU COM communication.

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
						Access Target				
Function input (FX)		×	×	×	×	×		○	×	×
Function output (FY)		×	×	×	×	×		○	×	×
Function register (FD)		×	×	×	×	×		○	×	×
Special relay (SM)		○	○	○	○	○		○	×	○
Special register (SD)		○	○	○	○	○		○	×	○
Input relay (X)		○	○	○	○	○		○	○	○
Output relay (Y)		○	○	○	○	○		○	○	○
Internal relay (M)		○	○	○	○	○		○	○	○
Latch relay (L)		○	○	○	○	○		○	×	○
Annunciator (F)		○	○	○	○	○		○	×	○
Edge relay (V)		×	×	×	×	×		○	×	×
Link relay (B)		○	○	○	○	○		○	×	○
Data register (D)		○	○	○	○	○		○	○	○
Link register (W)		○	○	○	○	○		○	×	○
Timer	Contact (TS)	○	○	○	○	○		○	○	○
	Coil (TC)	○	○	○	○	○		○	○	○
	Present value (TN)	○	○	○	○	○		○	○	○
Counter	Contact (CS)	○	○	○	○	○		○	○	○
	Coil (CC)	○	○	○	○	○		○	○	○
	Present value (CN)	○	○	○	○	○		○	○	○
Retentive timer	Contact (SS)	×	×	×	×	×		○	×	×
	Coil (SC)	×	×	×	×	×		○	×	×
	Present value (SN)	×	×	×	×	×		○	×	×
Link special relay (SB)		×	×	×	×	×		○	×	×
Link special register (SW)		×	×	×	×	×		○	×	×
Step relay (S)		○	○	○	○	○		×	○	○
Direct input (DX)		×	×	×	×	×		×	×	×
Direct output (DY)		×	×	×	×	×		×	×	×
Accumulator (A)		○	○	○	○	○		×	×	○
Index register	(Z)	○	○	○	○	○		○	○ *1	○
	(V)	○	○	○	○	○		×	○ *1	○
File register	(R)	○	○	○	○	○		○ *3	× *2	○
	(ZR)	×	×	×	×	×		○ *3	×	×
Extended file register (ER*\R)		○	○	○	○	○		×	×	○

*1: Data cannot be written to 2 or more consecutive points using WriteDeviceBlock or WriteDeviceBlock2. (Data may be written to only one point.)
*2: When specifying the file register, specify the data register (D).
*3: Disabled for use of Q00JCPU

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
Access Target										
Direct link	Link input (J∗\X)	×	×	×	×	×		○	×	×
	Link output (J∗\Y)	×	×	×	×	×		○	×	×
	Link relay (J∗\B)	×	×	×	×	×		○	×	×
	Link special relay (J∗\SB)	×	×	×	×	×		○	×	×
	Link register (J∗\W)	×	×	×	×	×		○	×	×
	Link special register (J∗\SW)	×	×	×	×	×		○	×	×
Special direct buffer memory (U∗\G)		×	×	×	×	×		○ ∗4	×	×

∗4: In a multi-CPU configuration, read from the shared memory of the host CPU cannot be performed.
In addition, write to the shared memory cannot be performed independently of the host or other CPU.

8.4.2 Accessible ranges

This section indicates the accessible ranges for CPU COM communication.

(1) Configuration

(2) Accessibility list
The following table indicates whether access can be made or not.
The connected station CPUs are all accessible.
Whether the relay target CPU is accessible or not is indicated by ○ (accessible)
or × (inaccessible).

1. Connected Station CPU (Usable control name)	2. Relayed Network	3. Relay Target CPU					
		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU *3
QCPU(Q mode) (ActQCPUQ, ActMLQCPUQ) *4	MELSECNET/H	○	×	×	×	×	×
	MELSECNET/10	○	○	○	○	×	○
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	○ *1	×	○ *1	×	×	×
	Computer link	○	×	○	×	×	×
	CC-Link	○	○ *2	○ *2	○ *2	×	○ *2
QCPU(A mode) (ActQCPUA, ActMLQCPUA)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	×	○	×	○	×	○
	MELSECNET(II)	×	○	×	○	×	○
	Ethernet	×	×	×	×	×	×
	Computer link	×	×	×	×	×	×
	CC-Link	×	×	×	×	×	×
QnACPU (ActQnACPU, ActMLQnACPU)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	×	×	○	×	×	×
	MELSECNET(II)	×	×	○	×	×	×
	Ethernet	×	×	○ *1	×	×	×
	Computer link	×	×	○	×	×	×
	CC-Link	×	×	×	×	×	×

*1: Set the parameter-set values of the target station side Q series-compatible E71 or QE71 to the network number and station number.
   Also set the "MNET/10 routing information" of the Q series-compatible E71 or QE71 parameter setting.
   At that time, specify any of the IP address calculation system, table conversion system and combined system as the "MNET/10 routing system".
*2: As the relayed station CPU side CC-Link system master/local module, use the module of software version "S" or later.
*3: Accessible to the A171SHCPU, A172SHCPU, A173UHCPU(-S1) or A273UHCPU(-S3) only
*4: For the Q00J/Q00/Q01CPU, some network cards have restrictions on the number of loadable cards. Refer to Appendix 5 for details.

1. Connected Station CPU (Usable control name)	2. Relayed Network	3. Relay Target CPU					
		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU *3
ACPU, Motion controller CPU (ActACPU, ActMLACPU)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	×	○	×	○	×	○
	MELSECNET(II)	×	○	×	○	×	○
	Ethernet	×	×	×	×	×	×
	Computer link	×	×	×	×	×	×
	CC-Link	×	×	×	×	×	×
FXCPU (ActFXCPU, ActMLFXCPU)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	×	×	×	×	×	×
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	×	×	×	×	×	×
	Computer link	×	×	×	×	×	×
	CC-Link	×	×	×	×	×	×

＊3: Accessible to the A171SHCPU, A172SHCPU, A173UHCPU(-S1) or A273UHCPU(-S3) only

8.5 For CPU USB Communication

This section provides the accessible devices and accessible ranges for CPU USB communication.

8.5.1 Accessible devices

The following table indicates the accessible devices for CPU USB communication.

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
Function input (FX)		×	×	×	×	×		○	×	×
Function output (FY)		×	×	×	×	×		○	×	×
Function register (FD)		×	×	×	×	×		○	×	×
Special relay (SM)		○	○	○	○	○		○	×	○
Special register (SD)		○	○	○	○	○		○	×	○
Input relay (X)		○	○	○	○	○		○	×	○
Output relay (Y)		○	○	○	○	○		○	×	○
Internal relay (M)		○	○	○	○	○		○	×	○
Latch relay (L)		○	○	○	○	○		○	×	○
Annunciator (F)		○	○	○	○	○		○	×	○
Edge relay (V)		×	×	×	×	×		○	×	×
Link relay (B)		○	○	○	○	○		○	×	○
Data register (D)		○	○	○	○	○		○	×	○
Link register (W)		○	○	○	○	○		○	×	○
Timer	Contact (TS)	○	○	○	○	○		○	×	○
	Coil (TC)	○	○	○	○	○		○	×	○
	Present value (TN)	○	○	○	○	○		○	×	○
Counter	Contact (CS)	○	○	○	○	○		○	×	○
	Coil (CC)	○	○	○	○	○		○	×	○
	Present value (CN)	○	○	○	○	○		○	×	○
Retentive timer	Contact (SS)	×	×	×	×	×		○	×	×
	Coil (SC)	×	×	×	×	×		○	×	×
	Present value (SN)	×	×	×	×	×		○	×	×
Link special relay (SB)		×	×	×	×	×		○	×	×
Link special register (SW)		×	×	×	×	×		○	×	×
Step relay (S)		○	○	○	○	○		×	×	○
Direct input (DX)		×	×	×	×	×		×	×	×
Direct output (DY)		×	×	×	×	×		×	×	×
Accumulator (A)		○	○	○	○	○		×	×	○
Index register	(Z)	○	○	○	○	○		○	×	○
	(V)	○	○	○	○	○		×	×	○
File register	(R)	○	○	○	○	○		○ *1	×	○
	(ZR)	×	×	×	×	×		○ *1	×	×
Extended file register (ER*\R)		○	○	○	○	○		×	×	○

*1: Disabled for use of Q00JCPU

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
Direct link	Link input (J∗\X)	×	×	×	×	×	○	×	×	×
	Link output (J∗\Y)	×	×	×	×	×	○	×	×	×
	Link relay (J∗\B)	×	×	×	×	×	○	×	×	×
	Link special relay (J∗\SB)	×	×	×	×	×	○	×	×	×
	Link register (J∗\W)	×	×	×	×	×	○	×	×	×
	Link special register (J∗\SW)	×	×	×	×	×	○	×	×	×
Special direct buffer memory (U∗\G)		×	×	×	×	×	○ ∗2	×	×	×

∗2: In a multi-CPU configuration, read from the shared memory of the host CPU cannot be performed.
   In addition, write to the shared memory cannot be performed independently of the host or other CPU.

8.5.2 Accessible ranges

This section indicates the accessible ranges for CPU USB communication.

(1)   Configuration

(2) Accessibility list

The following table indicates whether access can be made or not.

The connected station CPUs are all accessible.

Whether the relay target CPU is accessible or not is indicated by ○ (accessible) or × (inaccessible).

1. Connected Station CPU (Usable control name)	2. Relayed Network	3. Relay Target CPU					
		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU
QCPU(Q mode) (ActQCPUQUSB, ActMLQCPUQUSB)	MELSECNET/H	○	×	×	×	×	×
	MELSECNET/10	○	○	○	○	×	○
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	○ *1	×	○ *1	×	×	×
	Computer link	○	×	○	×	×	×
	CC-Link	○	○ *2	○ *2	○ *2	×	○ *2

*1: Set the parameter-set values of the target station side Q series-compatible E71 or QE71 to the network number and station number.

Also set the "MNET/10 routing information" of the Q series-compatible E71 or QE71 parameter setting.

At that time, specify any of the IP address calculation system, table conversion system and combined system as the "MNET/10 routing system".

*2: As the relayed station CPU side CC-Link system master/local module, use the module of software version "S" or later.

8.6 For MELSECNET/10 Communication

This section provides the accessible devices and accessible ranges for MELSECNET/10 communication.

8.6.1 Accessible devices

The following table indicates the accessible devices for MELSECNET/10 communication.

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)	Own board
Function input (FX)		×	×	×	×	×	○	×	×	×
Function output (FY)		×	×	×	×	×	○	×	×	×
Function register (FD)		×	×	×	×	×	○	×	×	×
Special relay (SM)		○	○	○	○	○	○	×	○	○
Special register (SD)		○	○	○	○	○	○	×	○	○
Input relay (X)		○	○	○	○	○	○	×	○	○
Output relay (Y)		○	○	○	○	○	○	×	○	○
Internal relay (M)		○	○	○	○	○	○	×	○	×
Latch relay (L)		○	○	○	○	○	○	×	○	×
Annunciator (F)		○	○	○	○	○	○	×	○	×
Edge relay (V)		×	×	×	×	×	○	×	×	×
Link relay (B)		○	○	○	○	○	○	×	○	○
Data register (D)		○	○	○	○	○	○	×	○	×
Link register (W)		○	○	○	○	○	○	×	○	○
Timer	Contact (TS)	○	○	○	○	○	○	×	○	×
	Coil (TC)	○	○	○	○	○	○	×	○	×
	Present value (TN)	○	○	○	○	○	○	×	○	×
Counter	Contact (CS)	○	○	○	○	○	○	×	○	×
	Coil (CC)	○	○	○	○	○	○	×	○	×
	Present value (CN)	○	○	○	○	○	○	×	○	×
Retentive timer	Contact (SS)	×	×	×	×	×	○	×	×	×
	Coil (SC)	×	×	×	×	×	○	×	×	×
	Present value (SN)	×	×	×	×	×	○	×	×	×
Link special relay (SB)		×	×	×	×	×	○	×	×	○
Link special register (SW)		×	×	×	×	×	○	×	×	○
Step relay (S)		○	○	○	○	○	×	×	○	×
Direct input (DX)		×	×	×	×	×	×	×	×	×
Direct output (DY)		×	×	×	×	×	×	×	×	×
Accumulator (A)		○	○	○	○	○	×	×	○	×
Index register	(Z)	○	○	○	○	○	○	×	○	×
	(V)	○	○	○	○	○	×	×	○	×
File register	(R)	○	○	○	○	○	○ ∗1	×	○	×
	(ZR)	×	×	×	×	×	○ ∗1	×	×	×
Extended file register (ER∗\R)		○	○	○	○	○	×	×	○	×

∗1: Disabled for use of Q00JCPU

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)	Own board
	Access Target										
Direct link	Link input (J∗\X)	×	×	×	×	×	○		×	×	×
	Link output (J∗\Y)	×	×	×	×	×	○		×	×	×
	Link relay (J∗\B)	×	×	×	×	×	○		×	×	×
	Link special relay (J∗\SB)	×	×	×	×	×	○		×	×	×
	Link register (J∗\W)	×	×	×	×	×	○		×	×	×
	Link special register (J∗\SW)	×	×	×	×	×	○		×	×	×
Special direct buffer memory (U∗\G)		×	×	×	×	×	○ ∗2		×	×	×

∗2: In a multi-CPU configuration, read from the shared memory of the host CPU cannot be performed.
   In addition, write to the shared memory cannot be performed independently of the host or other CPU.

8.6.2 Accessible ranges

This section indicates the accessible ranges for MELSECNET/10 communication.

(1) Configuration
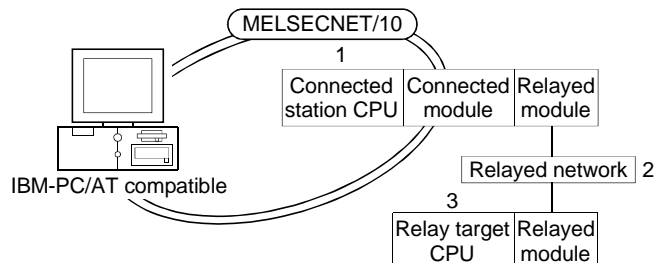
(2) Accessibility list

The following table indicates whether access can be made or not.
The connected station CPUs and own board (MELSECNET/10 board) are all accessible.
Whether the relay target CPU is accessible or not is indicated by ○ (accessible) or × (inaccessible).

1. Connected Station CPU (Usable control name)	2. Relayed Network	3. Relay Target CPU					
		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU *2
QCPU(Q mode) (ActMnet10BD, ActMLMnet10BD)	MELSECNET/H	○	×	×	×	×	×
	MELSECNET/10	○	○	○	○	×	○
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	○	×	×	×	×	×
	Computer link	○	×	×	×	×	×
	CC-Link	○	×	×	×	×	×
QnACPU*1, (ActMnet10BD, ActMLMnet10BD)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	○	○	○	○	×	○
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	×	×	○	×	×	×
	Computer link	×	×	○	×	×	×
	CC-Link	×	×	×	×	×	×
QCPU(A mode), ACPU, Motion controller CPU (ActMnet10BD, ActMLMnet10BD)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	○	○	○	○	×	○
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	×	×	×	×	×	×
	Computer link	×	×	×	×	×	×
	CC-Link	×	×	×	×	×	×

*1: Operates as the one equivalent to AnACPU.

*2: Accessible to the A171SHCPU, A172SHCPU, A173UHCPU(-S1) or A273UHCPU(-S3) only

8.7 For CC-Link Communication

This section provides the accessible devices and accessible ranges for CC-Link communication.

8.7.1 Accessible devices

The following table indicates the accessible devices for CC-Link communication.

(1) For another station access

Device (Device Name)		Access Target							
		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
Function input (FX)		×	×	×	×	×	○	×	×
Function output (FY)		×	×	×	×	×	○	×	×
Function register (FD)		×	×	×	×	×	○	×	×
Special relay (SM)		○	○	○	○	○	○	×	○
Special register (SD)		○	○	○	○	○	○	×	○
Input relay (X)		○	○	○	○	○	○	×	○
Output relay (Y)		○	○	○	○	○	○	×	○
Internal relay (M)		○	○	○	○	○	○	×	○
Latch relay (L)		○	○	○	○	○	○	×	○
Annunciator (F)		○	○	○	○	○	○	×	○
Edge relay (V)		×	×	×	×	×	○	×	×
Link relay (B)		○	○	○	○	○	○	×	○
Data register (D)		○	○	○	○	○	○	×	○
Link register (W)		○	○	○	○	○	○	×	○
Timer	Contact (TS)	○	○	○	○	○	○	×	○
	Coil (TC)	○	○	○	○	○	○	×	○
	Present value (TN)	○	○	○	○	○	○	×	○
Counter	Contact (CS)	○	○	○	○	○	○	×	○
	Coil (CC)	○	○	○	○	○	○	×	○
	Present value (CN)	○	○	○	○	○	○	×	○
Retentive timer	Contact (SS)	×	×	×	×	×	○	×	×
	Coil (SC)	×	×	×	×	×	○	×	×
	Present value (SN)	×	×	×	×	×	○	×	×
Link special relay (SB)		×	×	×	×	×	○	×	×
Link special register (SW)		×	×	×	×	×	○	×	×
Step relay (S)		○	○	○	○	○	×	×	○
Direct input (DX)		×	×	×	×	×	×	×	×
Direct output (DY)		×	×	×	×	×	×	×	×
Accumulator (A)		○	○	○	○	○	×	×	○
Index register	(Z)	○	○	○	○	○	○	×	○
	(V)	○	○	○	○	○	×	×	○
File register	(R)	○	○	○	○	○	○ *1	×	○
	(ZR)	×	×	×	×	×	○ *1	×	×
Extended file register (ER∗\R)		○	○	○	○	○	×	×	○

∗1: Disabled for use of Q00JCPU

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
					Access Target					
Direct link	Link input (J∗\X)	×	×	×	×	×	○	○	×	×
	Link output (J∗\Y)	×	×	×	×	×	○	○	×	×
	Link relay (J∗\B)	×	×	×	×	×	○	○	×	×
	Link special relay (J∗\SB)	×	×	×	×	×	○	○	×	×
	Link register (J∗\W)	×	×	×	×	×	○	○	×	×
	Link special register (J∗\SW)	×	×	×	×	×	○	○	×	×
Special direct buffer memory (U∗\G)		×	×	×	×	×	○ ∗2	○ ∗2	×	×

∗2: In a multi-CPU configuration, read from the shared memory of the host CPU cannot be performed.
   In addition, write to the shared memory cannot be performed independently of the host or other CPU.
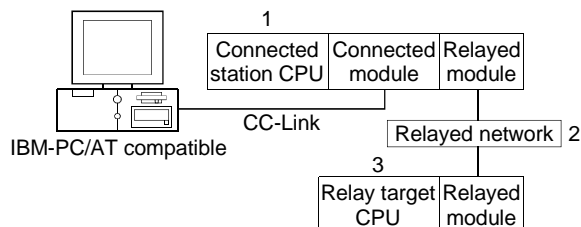
(2) For own board access

The following devices are usable only for own board access.

Device	Device Name	Remarks
Special relay	SM	Special relay of own board
Special register	SD	Special register of own board
Link special relay (for CC-Link)	SB	Link special relay of own board
Link special register (for CC-Link)	SW	Link special register of own board
Remote input	X	RX
Remote output	Y	RY
Link register	W	──
Remote register (write area for CC-Link)	WW	RWw
Remote register (read area for CC-Link)	WR	RWr
Buffer memory	ML	Buffer memory of own station CC-Link module
Random access buffer	MC	Random access buffer in buffer memory of own station CC-Link module
Automatic refresh buffer	MF	Automatic refresh buffer of own station CC-Link module

8.7.2 Accessible ranges

This section indicates the accessible ranges for CC-Link communication.

(1) Configuration

(2) Accessibility list

The following table indicates whether access can be made or not.
The connected station CPUs and own board (CC-Link board) are all accessible.
Whether the relay target CPU is accessible or not is indicated by ○ (accessible) or × (inaccessible).

1. Connected Station CPU (Usable control name)	2. Relayed Network	3. Relay Target CPU					
		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU
QCPU(Q mode), (ActCCBD, ActMLCCBD)	MELSECNET/H	○	×	×	×	×	×
	MELSECNET/10	○	×	×	×	×	×
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	○	×	×	×	×	×
	Computer link	×	×	×	×	×	×
	CC-Link	×	×	×	×	×	×
QnACPU (ActCCBD, ActMLCCBD)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	×	×	○	×	×	×
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	×	×	○	×	×	×
	Computer link	×	×	×	×	×	×
	CC-Link	×	×	×	×	×	×
QCPU(A mode), ACPU, Motion controller CPU (ActCCBD, ActMLCCBD)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	×	×	×	×	×	×
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	×	×	×	×	×	×
	Computer link	×	×	×	×	×	×
	CC-Link	×	×	×	×	×	×

8.8 For CC-Link G4 Communication

This section provides the accessible devices and accessible ranges for CC-Link G4 communication.

8.8.1 Accessible devices

The following table indicates the accessible devices for CC-Link G4 communication.

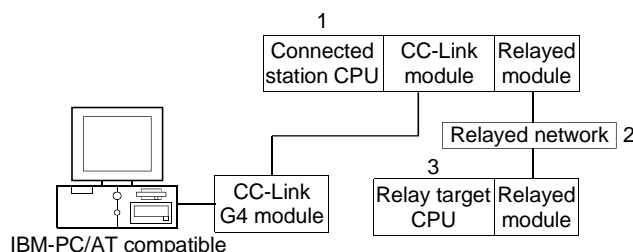| Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
Function input (FX)		×	×	×	×	×	×	○	×	×
Function output (FY)		×	×	×	×	×	×	○	×	×
Function register (FD)		×	×	×	×	×	×	○	×	×
Special relay (SM)		○	○	○	○	○	○	○	×	○
Special register (SD)		○	○	○	○	○	○	○	×	○
Input relay (X)		○	○	○	○	○	○	○	×	○
Output relay (Y)		○	○	○	○	○	○	○	×	○
Internal relay (M)		○	○	○	○	○	○	○	×	○
Latch relay (L)		○	○	○	○	○	○	○	×	○
Annunciator (F)		○	○	○	○	○	○	○	×	○
Edge relay (V)		×	×	×	×	×	×	○	×	×
Link relay (B)		○	○	○	○	○	○	○	×	○
Data register (D)		○	○	○	○	○	○	○	×	○
Link register (W)		○	○	○	○	○	○	○	×	○
Timer	Contact (TS)	○	○	○	○	○	○	○	×	○
	Coil (TC)	○	○	○	○	○	○	○	×	○
	Present value (TN)	○	○	○	○	○	○	○	×	○
Counter	Contact (CS)	○	○	○	○	○	○	○	×	○
	Coil (CC)	○	○	○	○	○	○	○	×	○
	Present value (CN)	○	○	○	○	○	○	○	×	○
Retentive timer	Contact (SS)	×	×	×	×	×	×	○	×	×
	Coil (SC)	×	×	×	×	×	×	○	×	×
	Present value (SN)	×	×	×	×	×	×	○	×	×
Link special relay (SB)		×	×	×	×	×	×	○	×	×
Link special register (SW)		×	×	×	×	×	×	○	×	×
Step relay (S)		○	○	○	○	○	×	×	×	○
Direct input (DX)		×	×	×	×	×	×	×	×	×
Direct output (DY)		×	×	×	×	×	×	×	×	×
Accumulator (A)		○	○	○	○	○	×	×	×	○
Index register	(Z)	○	○	○	○	○	○	○	×	○
	(V)	○	○	○	○	○	○	×	×	○
File register	(R)	○	○	○	○	○	○	○ ＊1	×	○
	(ZR)	×	×	×	×	×	×	○ ＊1	×	×
Extended file register (ER＊\R)		○	○	○	○	○	×	×	×	○

＊1: Disabled for use of Q00JCPU

Device (Device Name)		Access Target								
		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
Direct link	Link input (J∗\X)	×	×	×	×	×	○	×	×
	Link output (J∗\Y)	×	×	×	×	×	○	×	×
	Link relay (J∗\B)	×	×	×	×	×	○	×	×
	Link special relay (J∗\SB)	×	×	×	×	×	○	×	×
	Link register (J∗\W)	×	×	×	×	×	○	×	×
	Link special register (J∗\SW)	×	×	×	×	×	○	×	×
Special direct buffer memory (U∗\G)		×	×	×	×	×	○	×	×

8.8.2 Accessible ranges

This section indicates the accessible ranges for CC-Link G4 communication.

(1) Configuration

(2) Accessibility list

The following table indicates whether access can be made or not.
The connected station CPUs are all accessible.
Whether the relay target CPU is accessible or not is indicated by ○ (accessible) or × (inaccessible).

(a) When CC-Link G4 module is in Q mode

1. Connected Station CPU (Usable control name)	2. Relayed Network	3. Relay Target CPU					
		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU
QCPU (Q mode) (ActCCG4Q, ActMLCCG4Q)	MELSECNET/H	○	×	×	×	×	×
	MELSECNET/10	○	○	○	○	×	○
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	○	×	○	×	×	×
	Computer link	×	×	○	×	×	×
	CC-Link	×	×	×	×	×	×

(b) When CC-Link G module is in QnA mode

1. Connected Station CPU (Usable control name)	2. Relayed Network	3. Relay Target CPU					
		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU
QnACPU (ActCCG4QnA, ActMLCCG4QnA)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	×	×	○	×	×	×
	MELSECNET(II)	×	×	○	×	×	×
	Ethernet	×	×	○	×	×	×
	Computer link	×	×	○	×	×	×
	CC-Link	×	×	×	×	×	×

(c) When CC-Link G module is in A mode

1. Connected Station CPU (Usable control name)	2. Relayed Network	3. Relay Target CPU					
		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU
QCPU(A mode), ACPU, Motion controller CPU (ActCCG4A, ActMLCCG4A)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	×	×	×	×	×	×
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	×	×	×	×	×	×
	Computer link	×	×	×	×	×	×
	CC-Link	×	×	×	×	×	×

8.9 For CPU Board Communication

This section provides the accessible devices and accessible ranges for CPU board communication.

8.9.1 Accessible devices

The following table indicates the accessible devices for CPU board communication.

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
Function input (FX)		✕	✕	✕	✕	✕	○ *1		✕	✕
Function output (FY)		✕	✕	✕	✕	✕	○ *1		✕	✕
Function register (FD)		✕	✕	✕	✕	✕	○ *1		✕	✕
Special relay (SM)		○	○	○	○	○	○ *1		✕	○
Special register (SD)		○	○	○	○	○	○ *1		✕	○
Input relay (X)		○	○	○	○	○	○ *1		✕	○
Output relay (Y)		○	○	○	○	○	○ *1		✕	○
Internal relay (M)		○	○	○	○	○	○ *1		✕	○
Latch relay (L)		○	○	○	○	○	○ *1		✕	○
Annunciator (F)		○	○	○	○	○	○ *1		✕	○
Edge relay (V)		✕	✕	✕	✕	✕	○ *1		✕	✕
Link relay (B)		○	○	○	○	○	○ *1		✕	○
Data register (D)		○	○	○	○	○	○ *1		✕	○
Link register (W)		○	○	○	○	○	○ *1		✕	○
Timer	Contact (TS)	○	○	○	○	○	○ *1		✕	○
	Coil (TC)	○	○	○	○	○	○ *1		✕	○
	Present value (TN)	○	○	○	○	○	○ *1		✕	○
Counter	Contact (CS)	○	○	○	○	○	○ *1		✕	○
	Coil (CC)	○	○	○	○	○	○ *1		✕	○
	Present value (CN)	○	○	○	○	○	○ *1		✕	○
Retentive timer	Contact (SS)	✕	✕	✕	✕	✕	○ *1		✕	✕
	Coil (SC)	✕	✕	✕	✕	✕	○ *1		✕	✕
	Present value (SN)	✕	✕	✕	✕	✕	○ *1		✕	✕
Link special relay (SB)		✕	✕	✕	✕	✕	○ *1		✕	✕
Link special register (SW)		✕	✕	✕	✕	✕	○ *1		✕	✕
Step relay (S)		○	○	○	○	○	✕		✕	○
Direct input (DX)		✕	✕	✕	✕	✕	✕		✕	✕
Direct output (DY)		✕	✕	✕	✕	✕	✕		✕	✕
Accumulator (A)		○	○	○	○	○	✕		✕	○
Index register	(Z)	○	○	○	○	○	○ *1		✕	○
	(V)	○	○	○	○	○	✕		✕	○
File register	(R)	○	○	○	○	○	○ *1*2		✕	○
	(ZR)	✕	✕	✕	✕	✕	○ *1*2		✕	✕
Extended file register (ER*\R)		○	○	○	○	○	✕		✕	○

*1: Access to QCPU (Q mode) cannot be made.

When making access to QnACPU, the range is equivalent to that of AnACPU.

*2: Disabled for use of Q00JCPU

| Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Access Target Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
Direct link	Link input (J∗\X)	×	×	×	×	×	○ ∗1		×	×
	Link output (J∗\Y)	×	×	×	×	×	○ ∗1		×	×
	Link relay (J∗\B)	×	×	×	×	×	○ ∗1		×	×
	Link special relay (J∗\SB)	×	×	×	×	×	○ ∗1		×	×
	Link register (J∗\W)	×	×	×	×	×	○ ∗1		×	×
	Link special register (J∗\SW)	×	×	×	×	×	○ ∗1		×	×
Special direct buffer memory (U∗\G)		×	×	×	×	×	○ ∗1		×	×

∗1: Access to QCPU (Q mode) cannot be made.
   When making access to QnACPU, the range is equivalent to that of AnACPU.

8.9.2 Accessible ranges

This section indicates the accessible ranges for CPU board communication.

(1) Configuration
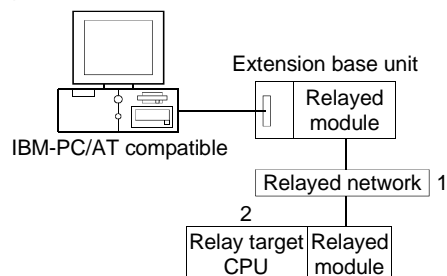
(2) Accessibility list

The following table indicates whether access can be made or not.

The own board (CPU board) is accessible.

Whether the relay target CPU is accessible or not is indicated by ◯ (accessible) or ✕ (inaccessible).

Network Board	1. Relayed Network	3. Relay Target CPU					
		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU *2
CPU board (ActAnUBD, ActMLAnUBD)	MELSECNET/H	✕	✕	✕	✕	✕	✕
	MELSECNET/10	✕	◯	◯ *1	◯	✕	◯
	Ethernet	✕	✕	✕	✕	✕	✕
	Computer link	✕	✕	✕	✕	✕	✕
	CC-Link	✕	✕	✕	✕	✕	✕

*1: Operates as the one equivalent to AnACPU.

*2: Accessible to the A171SHCPU, A172SHCPU, A173UHCPU(-S1) or A273UHCPU(-S3) only

8.10 For MELSECNET/H Communication

This section provides the accessible devices and accessible ranges for MELSECNET/H communication.

8.10.1 Accessible devices

The following table indicates the accessible devices for MELSECNET/H communication.

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)	Own board
Function input (FX)		×	×	×	×	×		○	×	×	×
Function output (FY)		×	×	×	×	×		○	×	×	×
Function register (FD)		×	×	×	×	×		○	×	×	×
Special relay (SM)		○	○	○	○	○		○	×	○	○
Special register (SD)		○	○	○	○	○		○	×	○	○
Input relay (X)		○	○	○	○	○		○	×	○	○
Output relay (Y)		○	○	○	○	○		○	×	○	○
Internal relay (M)		○	○	○	○	○		○	×	○	×
Latch relay (L)		○	○	○	○	○		○	×	○	×
Annunciator (F)		○	○	○	○	○		○	×	○	×
Edge relay (V)		×	×	×	×	×		○	×	×	×
Link relay (B)		○	○	○	○	○		○	×	○	○
Data register (D)		○	○	○	○	○		○	×	○	×
Link register (W)		○	○	○	○	○		○	×	○	○
Timer	Contact (TS)	○	○	○	○	○		○	×	○	×
	Coil (TC)	○	○	○	○	○		○	×	○	×
	Present value (TN)	○	○	○	○	○		○	×	○	×
Counter	Contact (CS)	○	○	○	○	○		○	×	○	×
	Coil (CC)	○	○	○	○	○		○	×	○	×
	Present value (CN)	○	○	○	○	○		○	×	○	×
Retentive timer	Contact (SS)	×	×	×	×	×		○	×	×	×
	Coil (SC)	×	×	×	×	×		○	×	×	×
	Present value (SN)	×	×	×	×	×		○	×	×	×
Link special relay (SB)		×	×	×	×	×		○	×	×	○
Link special register (SW)		×	×	×	×	×		○	×	×	○
Step relay (S)		○	○	○	○	○		×	×	○	×
Direct input (DX)		×	×	×	×	×		×	×	×	×
Direct output (DY)		×	×	×	×	×		×	×	×	×
Accumulator (A)		○	○	○	○	○		×	×	○	×
Index register	(Z)	○	○	○	○	○		○	×	○	×
	(V)	○	○	○	○	○		×	×	○	×
File register	(R)	○	○	○	○	○		○ ＊1	×	○	×
	(ZR)	×	×	×	×	×		○ ＊1	×	×	×
Extended file register (ER＊\R)		○	○	○	○	○		×	×	○	×

＊1: Disabled for use of Q00JCPU

(To next page)

| Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	$FX_{0(S)}$ FX_{0N} FX_1 FX_{1S} $FX_{1N(C)}$ $FX_{2(C)}$ $FX_{2N(C)}$	A171SH A172SH A173UH (-S1) A273UH(-S3)	Own board
						Access Target					
Direct link	Link input (J∗\X)	×	×	×	×	×	○		×	×	×
	Link output (J∗\Y)	×	×	×	×	×	○		×	×	×
	Link relay (J∗\B)	×	×	×	×	×	○		×	×	×
	Link special relay (J∗\SB)	×	×	×	×	×	○		×	×	×
	Link register (J∗\W)	×	×	×	×	×	○		×	×	×
	Link special register (J∗\SW)	×	×	×	×	×	○		×	×	×
Special direct buffer memory (U∗\G)		×	×	×	×	×	○ ∗2		×	×	×

∗2: In a multi-CPU configuration, read from the shared memory of the host CPU cannot be performed.
In addition, write to the shared memory cannot be performed independently of the host or other CPU.

8.10.2 Accessible ranges

This section indicates the accessible ranges for MELSECNET/H communication.

(1) Configuration
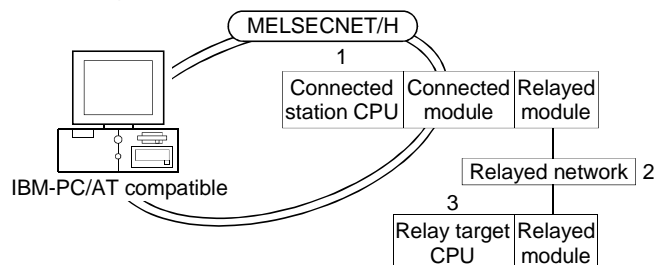
(2) Accessibility list

The following table indicates whether access can be made or not.
The connected station CPUs and own board (MELSECNET/H board) are all accessible.
Whether the relay target CPU is accessible or not is indicated by ○ (accessible) or × (inaccessible).

1. Connected Station CPU (Usable control name)	2. Relayed Network	3. Relay Target CPU					
		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU *3
QCPU(Q mode) (ActMnetHBD, ActMLMnetHBD)	MELSECNET/H *1	○	×	×	×	×	×
	MELSECNET/10 *2	○	○	○	○	×	○
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	○	×	×	×	×	×
	Computer link	○	×	×	×	×	×
	CC-Link	○	×	×	×	×	×
QnACPU *1, (ActMnetHBD, ActMLMnetHBD)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	○	○	○	○	×	○
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	×	×	○	×	×	×
	Computer link	×	×	○	×	×	×
	CC-Link	×	×	×	×	×	×
QCPU(A mode), ACPU, Motion controller CPU (ActMnetHBD, ActMLMnetHBD)	MELSECNET/H	×	×	×	×	×	×
	MELSECNET/10	○	○	○	○	×	○
	MELSECNET(II)	×	×	×	×	×	×
	Ethernet	×	×	×	×	×	×
	Computer link	×	×	×	×	×	×
	CC-Link	×	×	×	×	×	×

*1: Accessible when the MELSECNET/10(H) module of the connected station is in the MELSECNET/H mode

*2: Accessible when the MELSECNET/10(H) module of the connected station is in the MELSECNET/10 mode

*3: Accessible to the A171SHCPU, A172SHCPU, A173UHCPU(-S1) or A273UHCPU(-S3) only

8.11 For Q Series Bus Communication

This section provides the accessible devices and accessible ranges for Q series bus communication.

8.11.1 Accessible devices

The following table indicates the accessible devices for Q series bus communication.

Device (Device Name)		Access Target Q02(H), Q06H, Q12H, Q25H, Q12PH, Q25PH	Device (Device Name)		Access Target Q02(H), Q06H, Q12H, Q25H, Q12PH, Q25PH
Function input (FX)		○	Retentive timer	Coil (SC)	○
Function output (FY)		○		Present value (SN)	○
Function register (FD)		○	Link special relay (SB)		○
Special relay (SM)		○	Link special register (SW)		○
Special register (SD)		○	Step relay (S)		×
Input relay (X)		○	Direct input (DX)		×
Output relay (Y)		○	Direct output (DY)		×
Internal relay (M)		○	Accumulator (A)		×
Latch relay (L)		○	Index register	(Z)	○
Annunciator (F)		○		(V)	×
Edge relay (V)		○	File register	(R)	○
Link relay (B)		○		(ZR)	○
Data register (D)		○	Extended file register (ER∗\R)		×
Link register (W)		○	Direct link	Link input(J∗\X)	○
Timer	Contact (TS)	○		Link output(J∗\Y)	○
	Coil (TC)	○		Link relay(J∗\B)	○
	Present value (TN)	○		Link special relay(J∗\SB)	○
Counter	Contact (CS)	○		Link register(J∗\W)	○
	Coil (CC)	○		Link special register (J∗\SW)	○
	Present value (CN)	○	Special direct buffer memory(U∗\G)		○ ∗1
Retentive timer	Contact (SS)	○			

∗1: In a multi-CPU configuration, read from the shared memory of the host CPU cannot be performed.
In addition, write to the shared memory cannot be performed independently of the host or other CPU.

8.11.2 Accessible ranges

There are the following three accessible ranges for Q series bus communication.

(1) Access can be made to another CPU on the same base.
However, access cannot be made to another CPU via the network of another CPU.

(2) Access can be made to another CPU via the MELSECNET/H module controlled by the PC CPU module.
In this case, the accessible ranges are as in MELSECNET/H communication. Refer to Section 8.10.2.

The IBM-PC/AT compatible used for MELSECNET/H communication corresponds to the PC CPU module, and the MELSECNET/H board to the MELSECNET/H module.

(3) Access can be made to another CPU via the CC-Link module controlled by the PC CPU module.
In this case, the accessible ranges are as in CC-Link communication. Refer to Section 8.7.2.

The IBM-PC/AT compatible used for CC-Link communication corresponds to the PC CPU module, and the CC-Link board to the CC-Link module.

8.12 For Modem Communication

This section explains the accessible devices and accessible ranges for modem communication.

8.12.1 Accessible devices

The following table indicates the accessible devices for modem communication.

Device (Device Name)		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
Function input (FX)		×	×	×	×	×		○	×	×
Function output (FY)		×	×	×	×	×		○	×	×
Function register (FD)		×	×	×	×	×		○	×	×
Special relay (SM)		○	○	○	○	○		○	×	○
Special register (SD)		○	○	○	○	○		○	×	○
Input relay (X)		○	○	○	○	○		○	○ *1	○
Output relay (Y)		○	○	○	○	○		○	○ *1	○
Internal relay (M)		○	○	○	○	○		○	○ *1	○
Latch relay (L)		○	○	○	○	○		○	×	○
Annunciator (F)		○	○	○	○	○		○	×	○
Edge relay (V)		×	×	×	×	×		○	×	×
Link relay (B)		○	○	○	○	○		○	×	○
Data register (D)		○	○	○	○	○		○	○ *1	○
Link register (W)		○	○	○	○	○		○	×	○
Timer	Contact (TS)	○	○	○	○	○		○	○ *1	○
	Coil (TC)	○	○	○	○	○		○	○ *1	○
	Present value (TN)	○	○	○	○	○		○	○ *1	○
Counter	Contact (CS)	○	○	○	○	○		○	○ *1	○
	Coil (CC)	○	○	○	○	○		○	○ *1	○
	Present value (CN)	○	○	○	○	○		○	○ *1	○
Retentive timer	Contact (SS)	×	×	×	×	×		○	×	×
	Coil (SC)	×	×	×	×	×		○	×	×
	Present value (SN)	×	×	×	×	×		○	×	×
Link special relay (SB)		×	×	×	×	×		○	×	×
Link special register (SW)		×	×	×	×	×		○	×	×
Step relay (S)		○	○	○	○	○		×	○ *1	○
Direct input (DX)		×	×	×	×	×		×	×	×
Direct output (DY)		×	×	×	×	×		×	×	×
Accumulator (A)		○	○	○	○	○		×	×	○
Index register	(Z)	○	○	○	○	○		○	○ *1 *2	○
	(V)	○	○	○	○	○		×	○ *1 *2	○
File register	(R)	○	○	○	○	○	○ *4		× *3	○
	(ZR)	×	×	×	×	×	○ *4		×	×

*1: Only the FX1S, FX1N, FX1NC, FX2N or FX2NC can be used.

*2: WriteDeviceBlock or WriteDeviceBlock2 cannot be used to write data to 2 or more points consecutively. (Data can be written to one point only.)

*3: When specifying the file register, specify the data register (D).

*4: Disabled for use of Q00JCPU

Device (Device Name)		Access Target							
		A1N	A0J2H A1S(-S1) A1SH A1SJ(H) A2C(J) A2N(-S1) A2S(-S1) A2SH(-S1) A1FX	A2A(-S1) A2U(-S1) A2US(-S1) A2AS (-S1/-S30) A2USH-S1 Q02(H)-A Q06H-A	A3N A3A A3U	A4U	Q2A(-S1) Q2AS(-S1) Q2ASH(-S1) Q3A Q4A Q4AR	Q00J Q00 Q01 Q02(H) Q06H Q12H Q25H Q12PH Q25PH	FX0(S) FX0N FX1 FX1S FX1N(C) FX2(C) FX2N(C)	A171SH A172SH A173UH (-S1) A273UH(-S3)
Extended file registers (ER✻\R)		○	○	○	○	○	✕		✕	○
Direct link	Link input (J✻\X)	✕	✕	✕	✕	✕	○		✕	✕
	Link output (J✻\Y)	✕	✕	✕	✕	✕	○		✕	✕
	Link relay (J✻\B)	✕	✕	✕	✕	✕	○		✕	✕
	Link special relay (J✻\SB)	✕	✕	✕	✕	✕	○		✕	✕
	Link register (J✻\W)	✕	✕	✕	✕	✕	○		✕	✕
	Link special register (J✻\SW)	✕	✕	✕	✕	✕	○		✕	✕
Special direct buffer memory (U✻\G)		✕	✕	✕	✕	✕	○✻5		✕	✕

✻5: In a multi-CPU configuration, read from the shared memory of the host CPU cannot be performed.
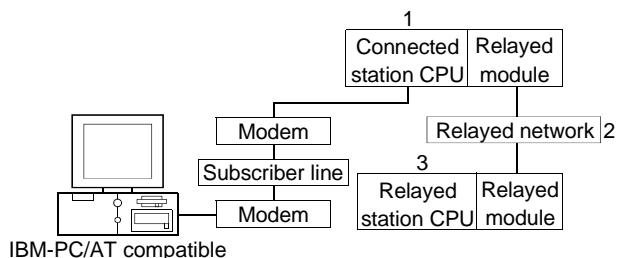   In addition, write to the shared memory cannot be performed independently of the host or other CPU.

8.12.2 Accessible ranges

This section indicates the accessible ranges for Modem communication.
(1)　When using A6TEL and Q6TEL
(a)　Configuration

(b)　Accessibility list
The following table indicates whether access can be made or not.
The connected CPUs are all accessible.
Whether the relay target CPU is accessible or not is indicated by ○ (accessible) or × (inaccessible).

Connected Station			3. Relay Target CPU					
1. CPU	Connected unit (Usable control name)	2. Relayed Network	QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU
QnACPU	Q6TEL(QnA mode) (ActQ6TEL)	MELSECNET/H	×	×	×	×	×	×
		MELSECNET/10	×	×	○	×	×	×
		MELSECNET(II)	×	×	○	×	×	×
		Ethernet	×	×	○	×	×	×
		Computer link	×	×	○	×	×	×
		CC-Link	×	×	×	×	×	×
ACPU, Motion controller CPU	A6TEL, Q6TEL(A mode) (ActA6TEL)	MELSECNET/H	×	×	×	×	×	×
		MELSECNET/10	×	○	×	○	×	○
		MELSECNET(II)	×	○	×	○	×	○
		Ethernet	×	×	×	×	×	×
		Computer link	×	×	×	×	×	×
		CC-Link	×	×	×	×	×	×

(2) When using FXCPU
(a) Configuration

(b) Accessibility list
The following table indicates whether access can be made or not.
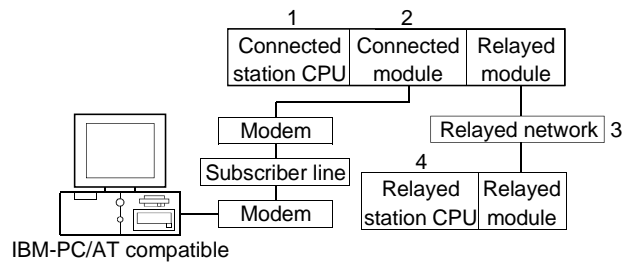The connected station CPUs are all accessible.
Whether the relay target CPU is accessible or not is indicated by ○
(accessible) or ✕ (inaccessible).

1. Connected Station CPU (Usable control name)	2. Relayed Network	3. Relay Target CPU					
		QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU
FXCPU ＊1 (ActFXCPUTEL)	MELSECNET/H	✕	✕	✕	✕	✕	✕
	MELSECNET/10	✕	✕	✕	✕	✕	✕
	MELSECNET(II)	✕	✕	✕	✕	✕	✕
	Ethernet	✕	✕	✕	✕	✕	✕
	Computer link	✕	✕	✕	✕	✕	✕
	CC-Link	✕	✕	✕	✕	✕	✕

＊1: Only the FX1S, FX1N, FX1NC, FX2N or FX2NC can be used.

(3) When using Q series compatible C24 and QC24N
(a) Configuration

IBM-PC/AT compatible

(b) Accessibility list
The following table indicates whether access can be made or not.
The connected station CPUs are all accessible.
Whether the relay target CPU is accessible or not is indicated by ○
(accessible) or × (inaccessible).

Connected Station			4. Relay Target CPU					
1. CPU	2. Connected unit (Usable control name)	3. Relayed Network	QCPU (Q mode)	QCPU (A mode)	QnACPU	ACPU	FXCPU	Motion controller CPU
QCPU (Q mode)	Q series compatible C24 (ActQJ71C24TEL)	MELSECNET/H	○	×	×	×	×	×
		MELSECNET/10	○	○	○	○	×	○
		MELSECNET(II)	×	×	×	×	×	×
		Ethernet	○	×	○	×	×	×
		Computer link	○	×	○	×	×	×
		CC-Link	○	○	○	○	×	○
		Multidrop (Independent mode) *1	○	×	○	×	×	×
QnACPU	QC24N (ActAJ71QC24TEL)	MELSECNET/H	×	×	×	×	×	×
		MELSECNET/10	×	×	○	×	×	×
		MELSECNET(II)	×	×	○	×	×	×
		Ethernet	×	×	○	×	×	×
		Computer link	×	×	○	×	×	×
		CC-Link	×	×	○	×	×	×
		Multidrop (Independent mode) *1	×	×	○	×	×	×

*1: Indicates the CH2 side setting. (The CH1 side is fixed to the independent mode.)

8.13 For Gateway Function Communication

This section describes the accessible devices and accessible ranges for gateway function communication.

8.13.1 Accessible devices

This section indicates the accessible devices for gateway function communication.

(1)   Accessible devices

Only the following device is accessible for gateway function communication.
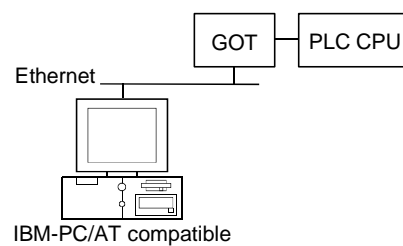Device: Gateway device
Device name: EG

8.13.2 Accessible ranges

This section indicates the accessible ranges for gateway function communication.

(1)   Configuration

(2)   Accessible ranges

Access can be made to only the connected GOT.

APPENDICES

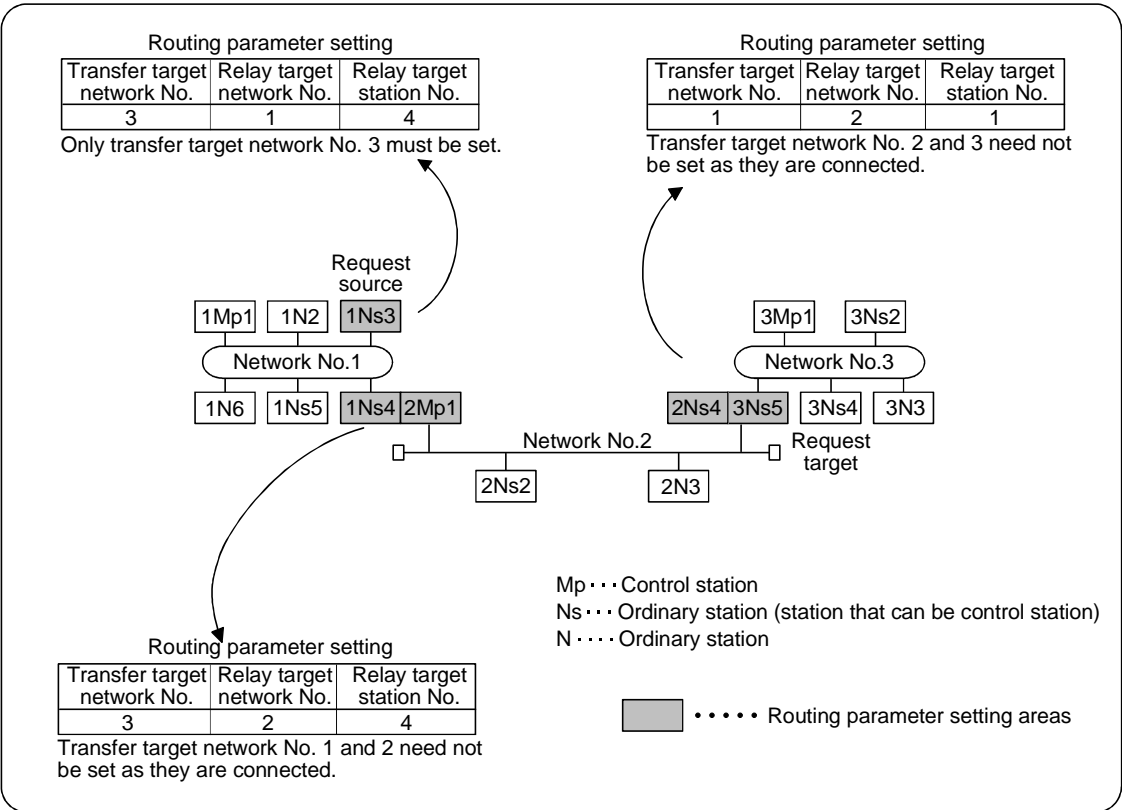## Appendix 1 Concept of the Routing Parameters

The routing function is used by the station of the PLC in a multi-level system to make transient transmission to the station of another network No.
To perform the routing function, the "Routing parameters" must be set to associate the network No.s and stations acting as bridges.
For communication via the MELSECNET(II), the routing function cannot be used.

(1) The routing parameters must be set to the request source and relay station of the PLC.

    (a) The request source must be set to make access to the request target.

    (b) The relay station must be set to make access from the request source to the request target and to make access from the request target to the request source.

    (c) The request target needs no setting.

For example, to make transient transmission from 1Ns3 to 3Ns4 in the following diagram, the routing parameters must be set to the PLC 1Ns3 which makes transient transmission, to the PLCs 1Ns4 and 2Mp1 which serve as bridges, and to the PLCs 2Ns4 and 3Ns5.
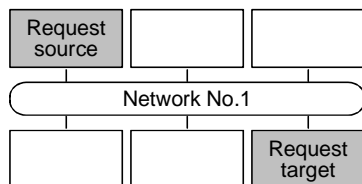

Routing parameter setting

Transfer target network No.	Relay target network No.	Relay target station No.
3	1	4

Only transfer target network No. 3 must be set.

Routing parameter setting

Transfer target network No.	Relay target network No.	Relay target station No.
1	2	1

Transfer target network No. 2 and 3 need not be set as they are connected.

Routing parameter setting

Transfer target network No.	Relay target network No.	Relay target station No.
3	2	4

Transfer target network No. 1 and 2 need not be set as they are connected.

Mp · · · Control station
Ns · · · Ordinary station (station that can be control station)
N · · · · Ordinary station

     · · · · · Routing parameter setting areas

(2) Up to 16 "transfer target network No.s" can be set to the PLC. 16 different network No.s allow the own station to be a request source or other stations to be accessed via the own station.

APP

(3) Routing parameter setting areas and data

For transient transmission, the routing parameter setting areas depend on the system.

(a) Two-level system

The routing parameters need not be set because transient transmission is made to within the same network.

Request source		

Network No.1

		Request target

(b) Multi-level 1 (two networks)

Set the routing parameters only to the station of the request source.

To the request source, set the data to access the request target (network No. 2).

Request source			Relay station			

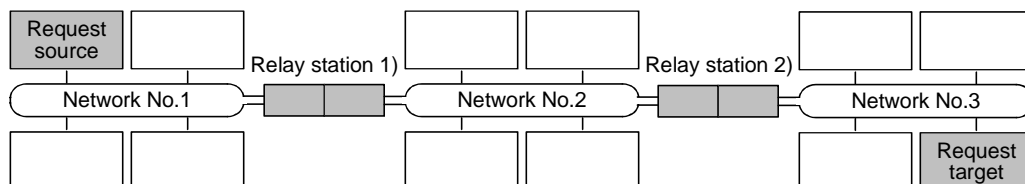Network No.1 — Network No.2
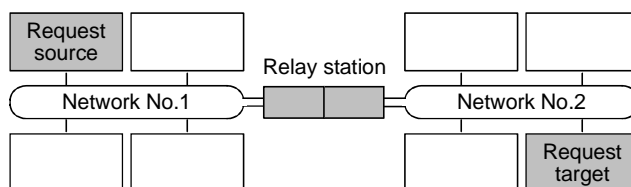
Request target

(c) Multi-level 2 (three networks)

Set the routing parameters to the request source and relay stations.

To the request source, set the data to access the request target (network No. 3).

To the relay station 1), set the data to access the request target (network No. 3).

To the relay station 2), set the data to access the request source (network No. 1).

Request source — Relay station 1) — Relay station 2) — Request target

Network No.1 — Network No.2 — Network No.3

(d) Multi-level 3 (four or more networks)

Set the routing parameters to the request source and relay stations.

To the request source, set the data to access the request target (network No. 4).

To the relay station 1) (the nearest relay station to the request source), set the data to access the request target (network No. 4).

To the relay station 2) (the nearest relay station to the request target), set the data to access the request source (network No. 1).

To the relay station 3) (relay station other than 1) and 2)), set the data to access the request target (network No. 4) and request source (network No. 1).

Request source — Relay station 1) — Relay station 3) — Relay station 2) — Request target

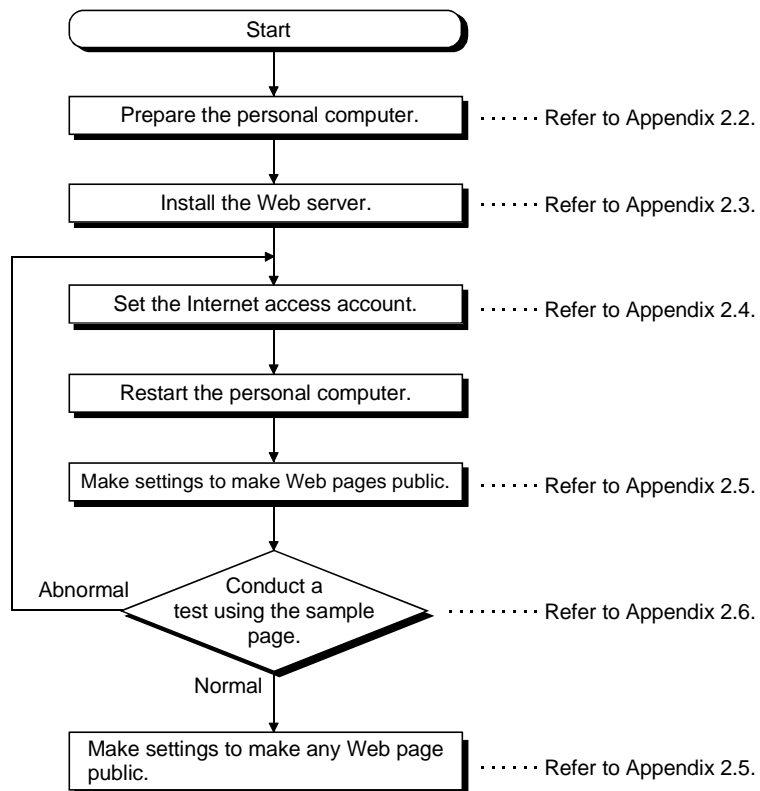Network No.1 — Network No.2 — Network No.3 — Network No.4

APP
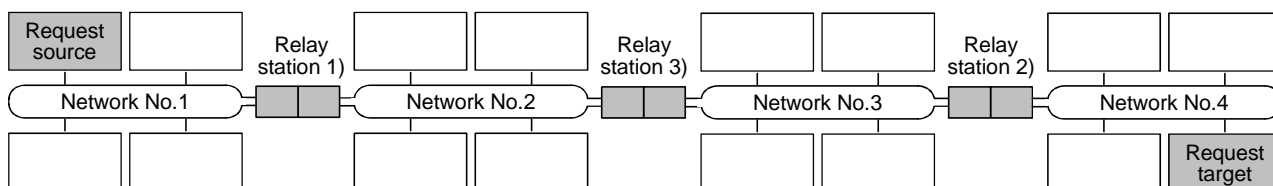
Appendix 2 How to Start the Internet/Intranet Environment

This section describes an example of configuring a system that uses MX Component to create a home page (HTML, ASP) for communication with the PLC CPU and display it using the browser (Internet Explorer) via the Internet/intranet.

Appendix 2.1 Operating procedure

The following is the procedure to start the Internet/intranet environment.

```
                        ┌────────────────────┐
                        │       Start        │
                        └────────────────────┘
                                  │
              ┌───────────────────────────────────────┐
              │    Prepare the personal computer.     │ · · · · · · Refer to Appendix 2.2.
              └───────────────────────────────────────┘
                                  │
              ┌───────────────────────────────────────┐
              │        Install the Web server.        │ · · · · · · Refer to Appendix 2.3.
              └───────────────────────────────────────┘
                                  │
              ┌───────────────────────────────────────┐
              │    Set the Internet access account.   │ · · · · · · Refer to Appendix 2.4.
              └───────────────────────────────────────┘
                                  │
              ┌───────────────────────────────────────┐
              │    Restart the personal computer.     │
              └───────────────────────────────────────┘
                                  │
              ┌───────────────────────────────────────┐
              │  Make settings to make Web pages public. │ · · · · · · Refer to Appendix 2.5.
              └───────────────────────────────────────┘
                                  │
   Abnormal              ╱  Conduct a   ╲
  ◄───────────────────── ◄ test using the sample ► · · · · · · · · Refer to Appendix 2.6.
                         ╲    page.     ╱
                                  │
                               Normal
                                  │
              ┌───────────────────────────────────────┐
              │  Make settings to make any Web page    │ · · · · · · Refer to Appendix 2.5.
              │  public.                               │
              └───────────────────────────────────────┘
```

POINT

Web pages using MX Component will not operate in the environment where a test using the sample page is not conducted properly.
Check the traffic, noise and others of the communication line to operate the sample page properly.

Appendix 2.2 Conditions of usable personal computers

The following are the conditions of the personal computers that may be used as a Web server and a Web client.

(1) Personal computer usable as Web server (factory side)

When using the personal computer as a Web server, use the personal computer that satisfies all of the following conditions 1 to 4.

	Description
Condition 1	Any of the following Operating Systems is operating on the personal computer. • Microsoft® Windows NT® Workstation Operating System Version 4.0 • Microsoft® Windows® 2000 Professional Operating System Version 4.0 • Microsoft® Windows® 98 Operating System • Microsoft® Windows® XP Professional Operating System
Condition 2	The personal computer can be connected to the Internet or intranet.
Condition 3	When Web pages are to be made public on the Internet, external access must not be inhibited by a firewall or like.
Condition 4	MX Component has been installed and settings have been made for communication with the PLC.

(2) Personal computer usable as Web client (office side)

When using the personal computer as a Web client, use the personal computer that satisfies both of the following conditions 1 and 2.

	Description
Condition 1	Any of the following Operating Systems is operating on the personal computer. • Microsoft® Windows NT® Workstation Operating System Version 4.0 • Microsoft® Windows® 2000 Professional Operating System Version 4.0 • Microsoft® Windows® 98 Operating System • Microsoft® Windows® 95 Operating System • Microsoft® Windows® Millennium Edition Operating System • Microsoft® Windows® XP Professional Operating System • Microsoft® Windows® XP Home Edtion Operating System
Condition 2	The personal computer can be connected to the Internet or intranet.

Appendix 2.3 How to install Web server

Install the Web server in the following method.

(1) When using Windows NT® Workstation 4.0
      Get "Windows NT® Option Pack 4.0" and install Peer Web Services 4.0.
      It can be installed using the CD drive: \setup.exe.

(2) When using Windows® 2000 Professional
      Choose [Control Panel]-[Add/Remove Programs] and install the Windows
      component "Internet Information Service (IIS)".
      The Windows® 2000 Professional setup CD is required for installation.

(3) When using Windows® XP Professional
      Choose [Control Panel]-[Add/Remove Programs] and install the Windows
      component "Internet Information Service (IIS)".
      The Windows® XP Professional setup CD is required for installation.

(4) When using Windows® 98
      Install Personal Web Server stored on the Windows® 98 setup CD.
      It can be installed using the CD drive: \add-ons\pws\setup.exe.

POINT
For detailed Web server installation method corresponding to the OS, refer to the installation procedure attached to the corresponding OS.

Appendix 2.4 Setting the Internet access account

When the OS of the personal computer where the Web server is operating is Windows NT® Workstation 4.0, Windows® 2000 Professional or Windows® XP Professional, a special right must be set to the Internet access account.

> POINT
>
> The settings in this section are not needed when the OS of the personal computer where the Web server is operating is Windows® 98.
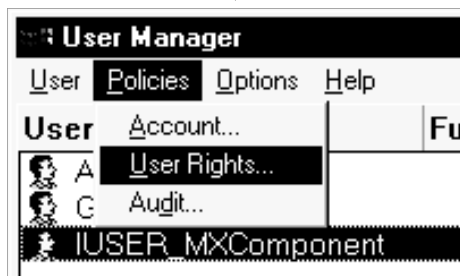
(1) When using Windows NT® Workstation 4.0

When the Active Server Pages (ASP) pages using MX Component are to be made public, the IUSR_Name (Internet Server Anonymous Access) must be given the "Debug programs" right.

Make settings in the following procedure.
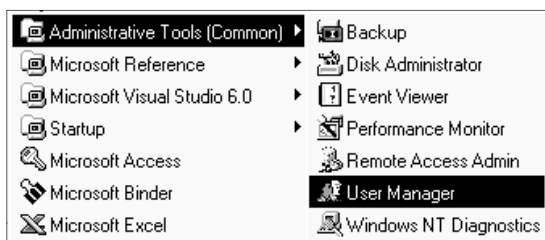
1) Choose the [Start]-[Programs]-[Administrative Tool(Common)]-[User Manager] menu.

↓

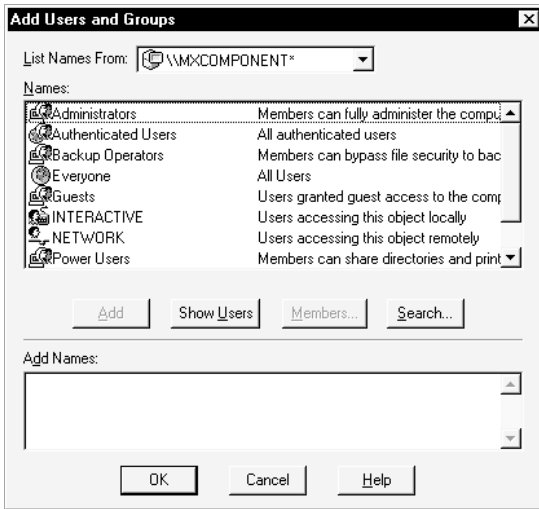2) As User Manager starts, choose the [Policies]-[User Rights] menu.

↓
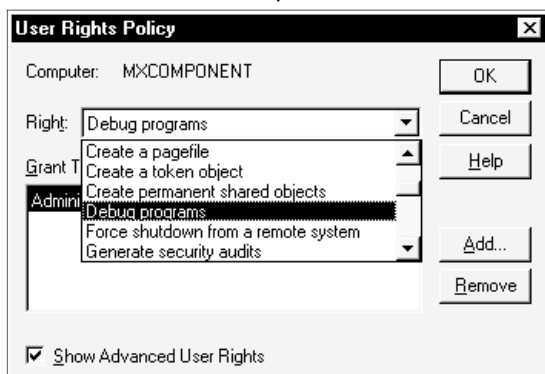
3) Check "Show Advanced User Rights" and choose "Debug programs" from the "Right" list box.
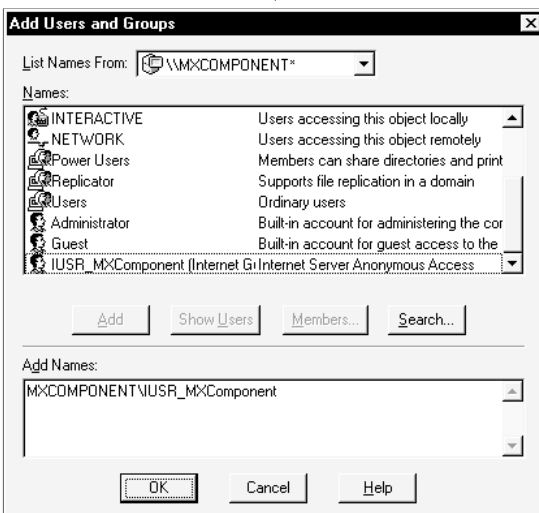
4) Click the Add button.

↓

(To next page)

(From preceding page)

↓

5) The "Add User and Groups" dialog box appears.
   At this time, if the computer name (name of the computer where Peer Web Server 4.0 has been set up) is not displayed in "List Names Form", select the computer name.

6) With the computer name selected, click the Show Users button.

↓

7) Choose the "IUSR_ computer name (Internet Server Anonymous Access)" account from the "Names" list box, and click the Add button.
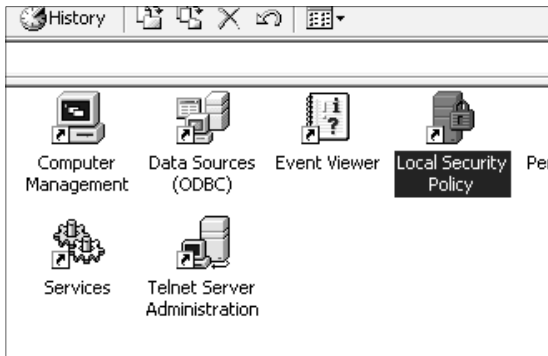
8) Click the OK button.

↓
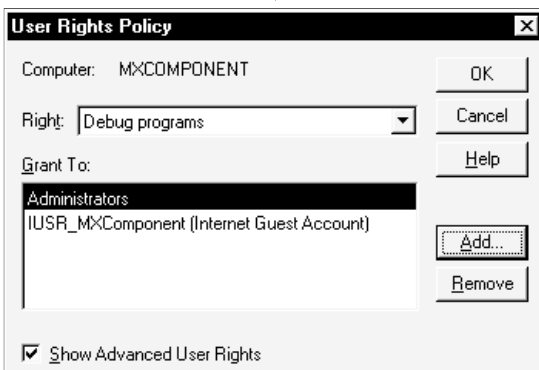
9) After making sure that the account has been added, reboot the personal computer.
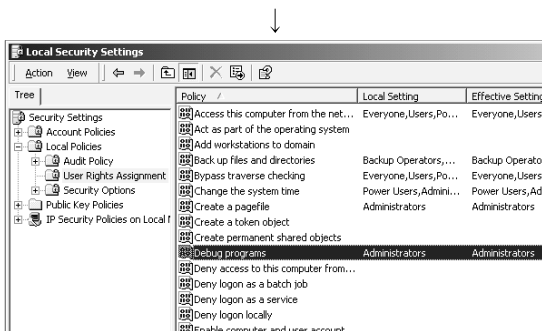
↓

(Setting completion)

(2) When using Windows® 2000 Professional

When the Active Server Pages (ASP) pages using MX Component are to be made public, the IUSR_Name(Internet Server Anonymous Access) must be given the "Debug programs" right.
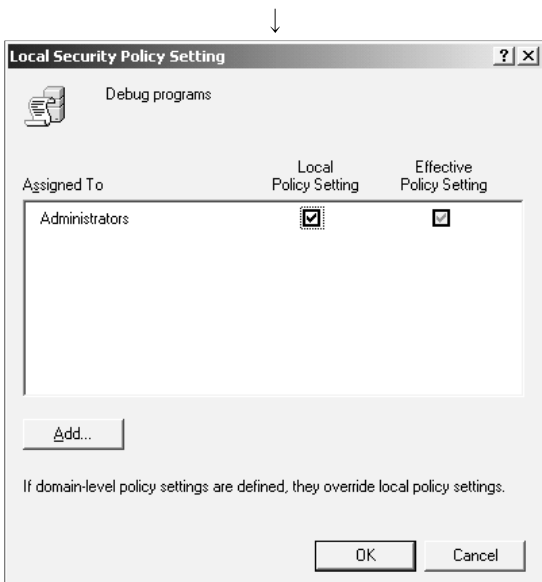
Make settings in the following procedure.

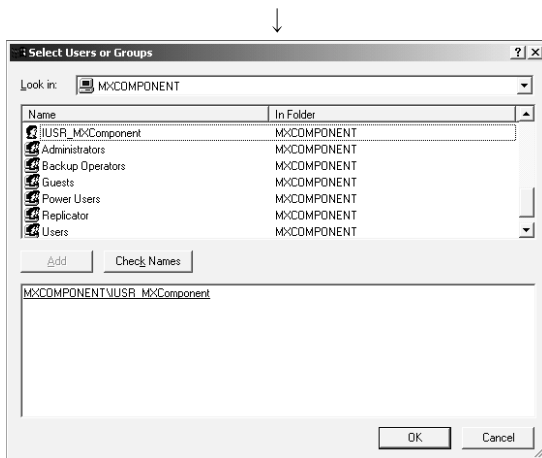
1) Choose [Administrative Tools]-[Local Security Policy].

↓

2) Choose [Local Policies]-[User Rights Assignment] in the tree structure and double-click "Debug programs".

↓

3) As the "Local Security Policy Setting" dialog box appears, click the Add button.

↓

(To next page)

(From preceding page)

↓

4) The "Select Users or Groups" dialog box appears.
At this time, if the computer name (name of the computer where Internet Information Service has been set up) is not displayed in "Lock in", select the computer name.

5) Choose the "IUSR_Name (Internet Server Anonymous Access)" account from the "Name" list box, and click the
Add button.

6) Click the OK button.

↓
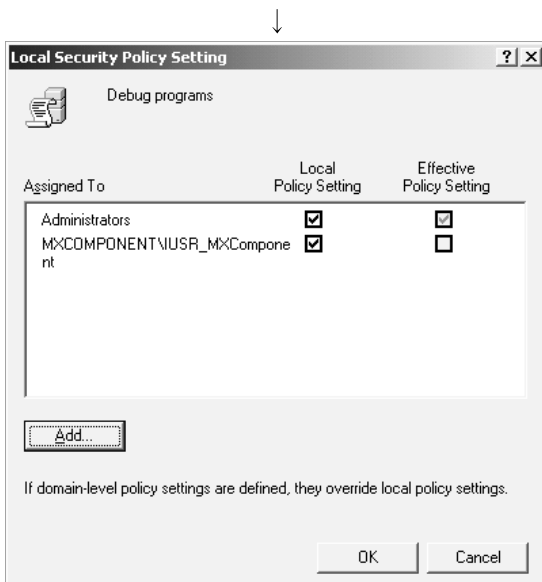
7) After making sure that the account has been added, reboot the personal computer.
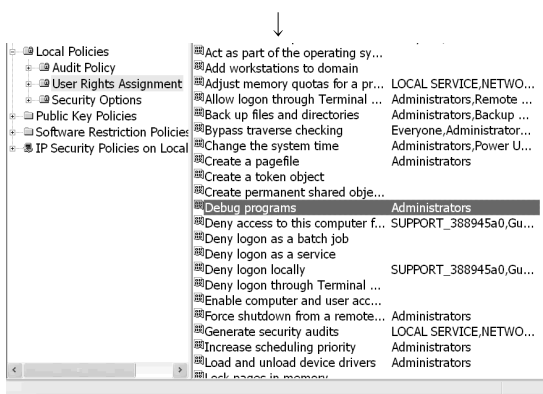
(3) When using Windows® XP Professional

When the Active Server Pages (ASP) pages using MX Component are to be made public, the IUSR_Name(Internet Server Anonymous Access) must be given the "Debug programs" right.
Make settings in the following procedure.

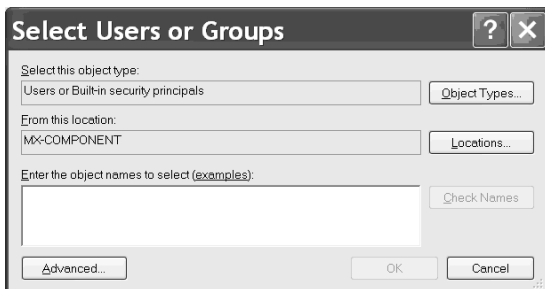1) Choose [Administrative Tools]-[Local Security Policy].

2) Choose [Local Policies]-[User Rights Assignment] in the tree structure and double-click "Debug programs".

3) As the "Local Security Policy Setting" dialog box appears, click the [Add User or Group] button.

(To next page)

(From preceding page)

↓

4) The "Select Users or Groups" dialog box appears.
At this time, if the computer name (name of the computer where Internet Information Service has been set up) is not displayed in "Locations", select the computer name.
After confirming the above setting, click the Advanced button.

↓
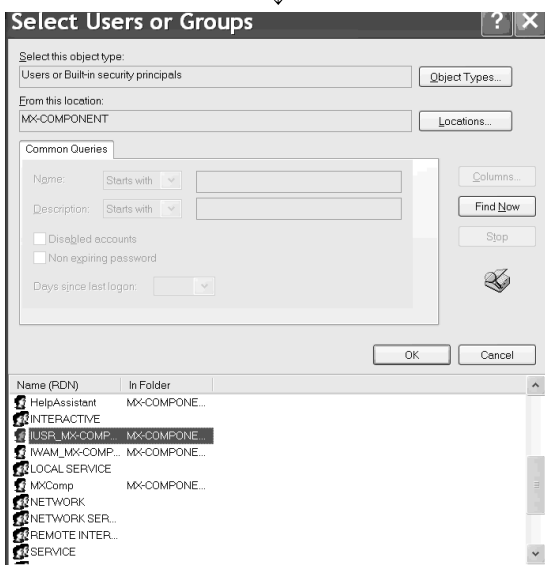
5) Click the Find Now button, and choose the "IUSR_Name (Internet Server Anonymous Access)" account from the "Name" list box, and click the OK button.

↓
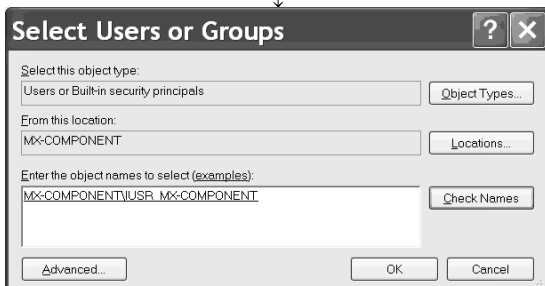
6) After making sure that the account has been added, reboot the personal computer.

Appendix 2.5 Making Web pages public

To make Web pages public on the Internet/intranet, the folder must be Web shared.
The following is the procedure to make the folder Web shared.
Though the screen slightly varies with the Web server OS, the setting procedure is the same.
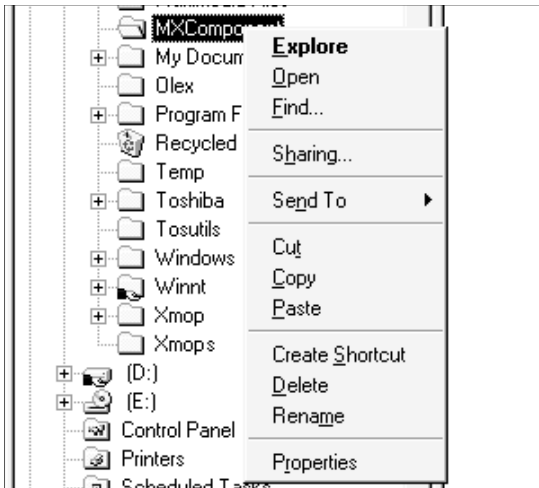
1) Boot Explorer and right-click any folder that contains the Web file (*.html, *.asp) to be made public to display the folder properties.
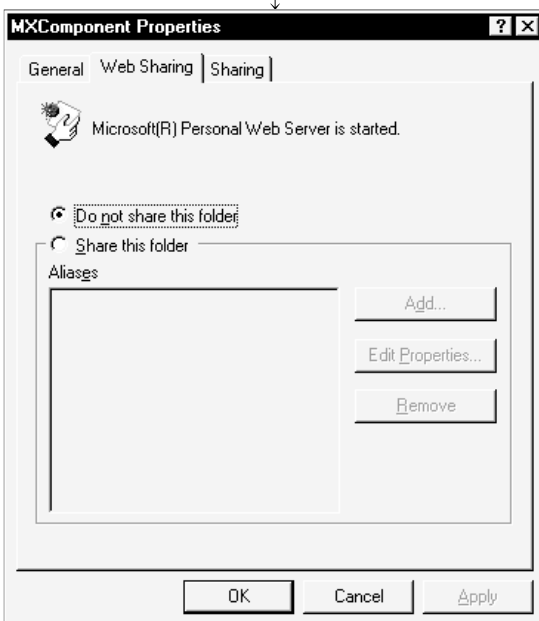
2) As the properties screen appears, choose the "Web Sharing" tab and select "Share this folder".
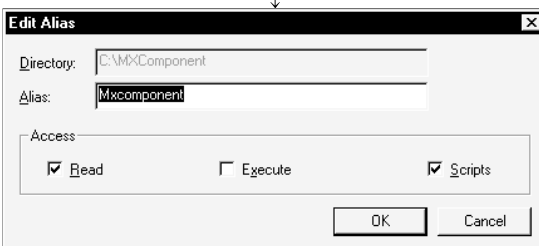
3) As the "Edit Alias" dialog box appears, change the alias here if you change it.

The alias is the underlined part of the URL to be specified on the Web browser.
http://**.**.**.**/Mxcomponent/NetTest.asp

(Setting completion)

Appendix 2.6 Checking whether access can be made to Web server properly or not

When a check is to be made via the Internet, the personal computer where the Web server has been installed must be connected to the Internet.
After confirming that the Web server is connected to the Internet/intranet, boot the Web browser (Internet Explorer) on the Web client side personal computer, enter the URL as indicated below, and make sure that the Web page is displayed properly.

(URL input example) http://10.97.85.10/Mxcomponent/NetTest.asp

                                                      └─ Alias set in Appendix 2.5

                        └─ IP address of Web server
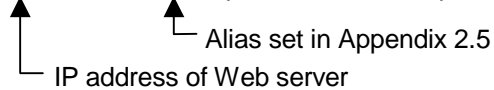
NetTest.asp is the Web server operation checking test page offered by MX Component.
Make sure that the system date and system time of the server are displayed on the Web browser.

> ### POINT
> (1) If access to NetTest.asp cannot be made properly, access cannot be made to the Web pages using MX Component, either.
>   In such a case, reconfirm the Web server settings and Web client browser settings.
>   If the settings are correct, the Web pages may not be displayed because communication cannot be made properly due to dense traffic or like of the communication line.
>   In this case, check the status of the communication line.
> (2) NetTest.asp is stored in the following folder.
>   [user-specified folder]-[Act]-[Sample]-[VBScript]-[SampleASP]

Appendix 3 Examples of Wiring RS-232C Cable for Connection of C24 and Personal Computer

Appendix 3.1 A Series

(1) When a 25-pin connector is used in a C24(computer link module)
(Example of connection 1)

Computer Link Module Side			Personal Computer Side
Signal Name	Pin No.		Signal Name
FG	1		FG
SD(TXD)	2		SD(TXD)
RD(RXD)	3		RD(RXD)
RS	4		RS
CS(CTS)	5		CS(CTS)
DSR(DR)	6		DSR(DR)
SG	7		SG
CD	8		CD
DTR(ER)	20		DTR(ER)
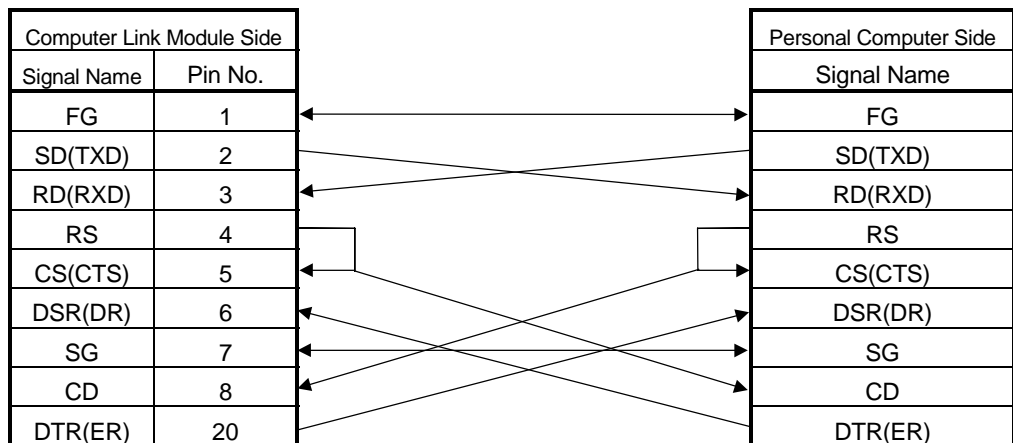
The CD signal need not be connected when the following connection is used for communication. Choose no CD terminal check (write 1) as the RS-232C CD terminal check setting (setting made at buffer memory address 10BH).

(Example of connection 2)

Computer Link Module Side			Personal Computer Side
Signal Name	Pin No.		Signal Name
FG	1		FG
SD(TXD)	2		SD(TXD)
RD(RXD)	3		RD(RXD)
RS	4		RS
CS(CTS)	5		CS(CTS)
DSR(DR)	6		DSR(DR)
SG	7		SG
CD	8		CD
DTR(ER)	20		DTR(ER)
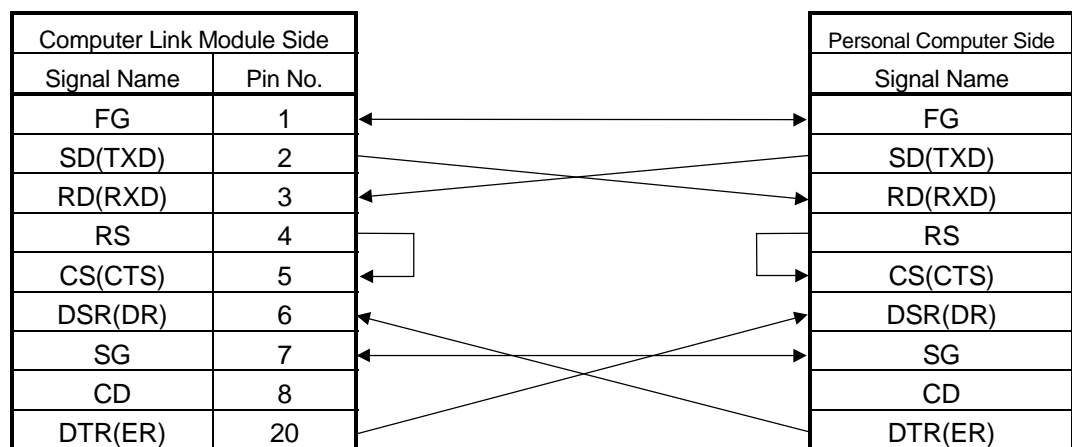
(2) When a 9-pin connector is used in a C24(computer link module)

(Example of connection 1)

Computer Link Module Side					Personal Computer Side
Signal Name	Pin No.				Signal Name
CD	1				CD
RD(RXD)	2				RD(RXD)
SD(TXD)	3				SD(TXD)
DTR(ER)	4				DTR(ER)
SG	5				SG
DSR(DR)	6				DSR(DR)
RS(RTS)	7				RS(RTS)
CS(CTS)	8				CS(CTS)

(Example of connection 2)

Computer Link Module Side					Personal Computer Side
Signal Name	Pin No.				Signal Name
CD	1				CD
RD(RXD)	2				RD(RXD)
SD(TXD)	3				SD(TXD)
DTR(ER)	4				DTR(ER)
SG	5				SG
DSR(DR)	6				DSR(DR)
RS(RTS)	7				RS(RTS)
CS(CTS)	8				CS(CTS)
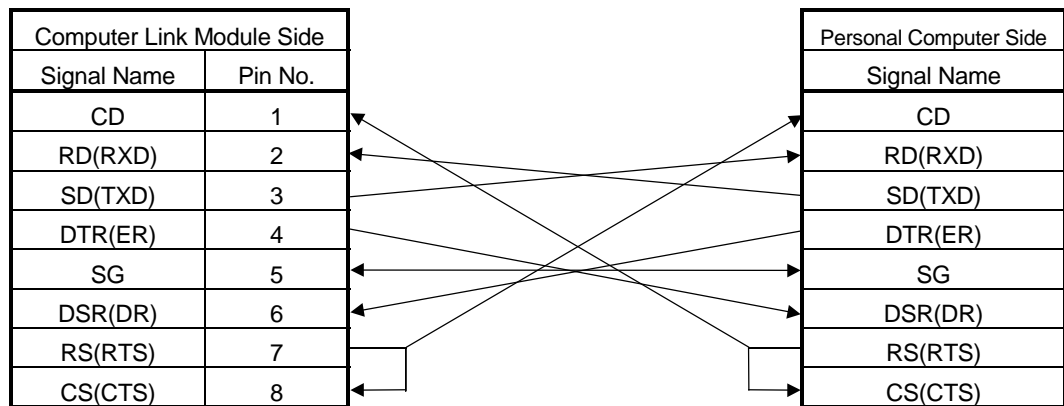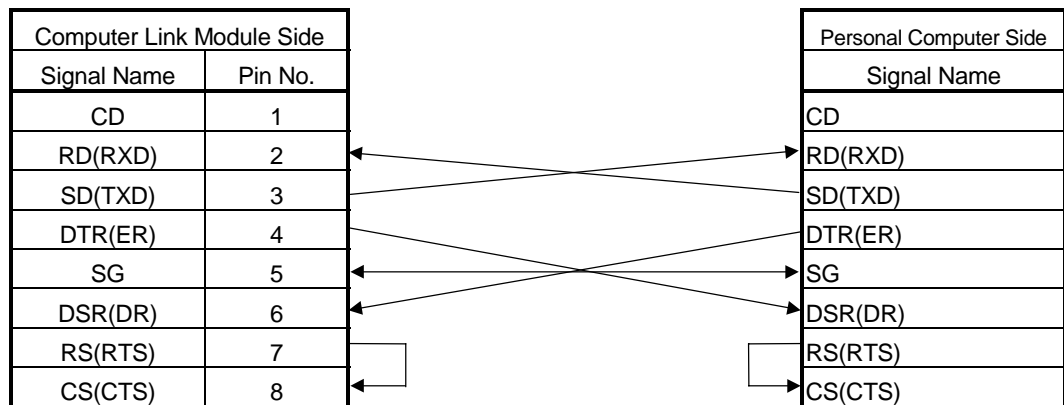
∗ Connecting the DTR and DSR signals of the C24 (computer link module) to the external device as shown above enables DC code control or DTR/DSR control.

Appendix 3.2 QnA Series

    (1) For large-scale QC24(N)

       (a) Example of connection to an external device that allows the CD signal(No.8 pin) to be turned ON/OFF

Large-scale QC24(N) Side		Cable Connection and Signal Direction	Personal Computer Side
Signal Name	Pin No.	(Full-/Half-Duplex Communication)	Signal Name
FG	1		FG
SD(TXD)	2		SD(TXD)
RD(RXD)	3		RD(RXD)
RS	4		RS
CS(CTS)	5		CS(CTS)
DSR(DR)	6		DSR(DR)
SG	7		SG
CD	8		CD
DTR(ER)	20		DTR(ER)

          DC code control or DTR/DSR control is enabled by connecting the QC24(N) to an external device as shown above.

       (b) Example of connection to an external device that dose not allow the CD signal(No.8 pin) to be turned ON/OFF

Large-scale QC24(N) Side		Cable Connection and Signal Direction	Personal Computer Side
Signal Name	Pin No.	(Full-Duplex Communication)	Signal Name
FG	1		FG
SD(TXD)	2		SD(TXD)
RD(RXD)	3		RD(RXD)
RS	4		RS
CS(CTS)	5		CS(CTS)
DSR(DR)	6		DSR(DR)
SG	7		SG
CD	8		CD
DTR(ER)	20		DTR(ER)

          DC code control or DTR/DSR control is enabled by connecting the QC24(N) to an external device as shown above.
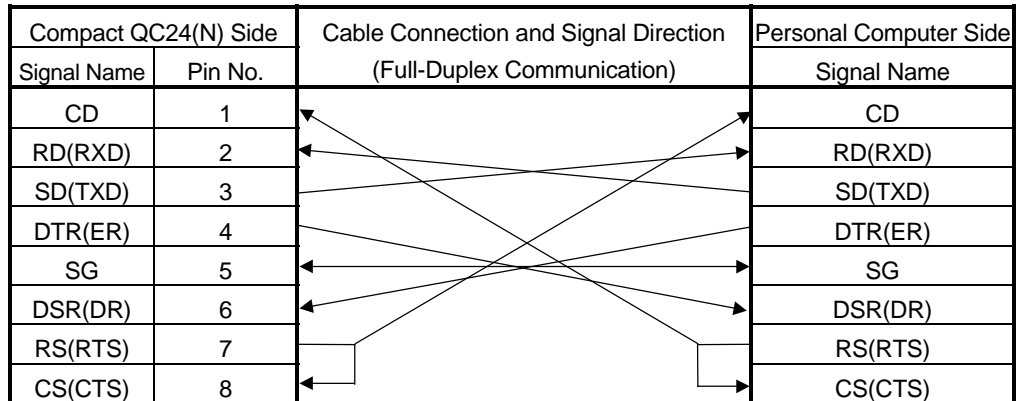
(2) For compact QC24(N)
  (a) Example of connection to an external device that allows the
      CD signal(No.1 pin) to be turned ON/OFF

Compact QC24(N) Side		Cable Connection and Signal Direction	Personal Computer Side
Signal Name	Pin No.	(Full-Duplex Communication)	Signal Name
CD	1		CD
RD(RXD)	2		RD(RXD)
SD(TXD)	3		SD(TXD)
DTR(ER)	4		DTR(ER)
SG	5		SG
DSR(DR)	6		DSR(DR)
RS(RTS)	7		RS(RTS)
CS(CTS)	8		CS(CTS)

DC code control or DTR/DSR control is enabled by connecting the
QC24(N) to an external device as shown above.

  (b) Example of connection to an external device that dose not
      allows the CD signal(No.1 pin) to be turned ON/OFF

Compact QC24(N) Side		Cable Connection and Signal Direction	Personal Computer Side
Signal Name	Pin No.	(Full-Duplex Communication)	Signal Name
CD	1		CD
RD(RXD)	2		RD(RXD)
SD(TXD)	3		SD(TXD)
DTR(ER)	4		DTR(ER)
SG	5		SG
DSR(DR)	6		DSR(DR)
RS(RTS)	7		RS(RTS)
CS(CTS)	8		CS(CTS)

DC code control or DTR/DSR control is enabled by connecting the
QC24(N) to an external device as shown above.

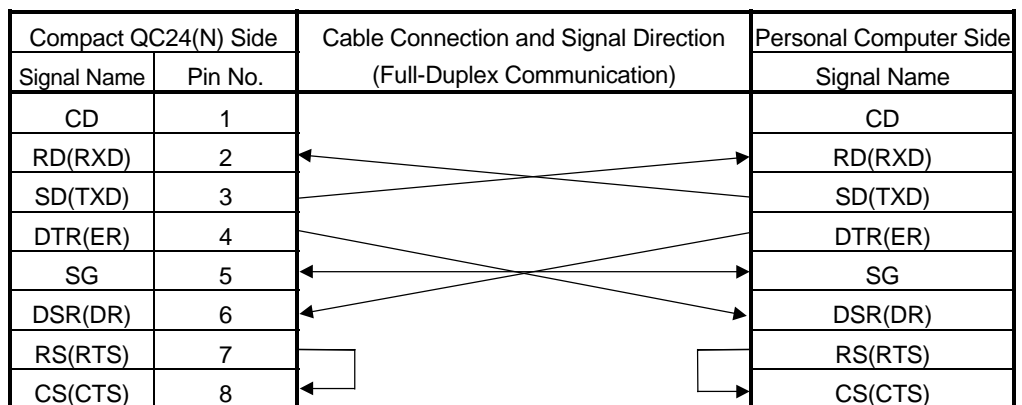Appendix 3.3 Q Series

The connector specifications are indicated below.

Pin No.	Signal Code	Signal Name	Signal Direction Q series-compatible C24↔external device
1	CD	Receive carrier detection	←
2	RD(RXD)	Receive data	←
3	SD(TXD)	Send data	→
4	DTR(ER)	Data terminal ready	→
5	SG	Send ground	←
6	DSR(DR)	Data set ready	←
7	RS(RTS)	Request to send	→
8	CS(CTS)	Clear to send	←
9	RI(CI)	Call indication	←

(1) Connection example which can turn ON/OFF CD signal (No.1 pin)

Q series -compatible C24		Cable Connection and Signal Direction (Connection example for full duplex/half duplex communication)	Personal Computer Side
Signal Name	Pin No.		Signal Name
CD	1		CD
RD(RXD)	2		RD(RXD)
SD(TXD)	3		SD(TXD)
DTR(ER)	4		DTR(ER)
SG	5		SG
DSR(DR)	6		DSR(DR)
RS(RTS)	7		RS(RTS)
CS(CTS)	8		CS(CTS)
RI(CI)	9		

(2) Connection example which cannot turn ON/OFF CD signal (No.1 pin)
Connection example for exercising DC code control or DTR/DSR control

| Q series -compatible C24		Cable Connection and Signal Direction (Connection example for full duplex communication)	Personal Computer Side
Signal Name	Pin No.		Signal Name
CD	1		CD
RD(RXD)	2		RD(RXD)
SD(TXD)	3		SD(TXD)
DTR(ER)	4		DTR(ER)
SG	5		SG
DSR(DR)	6		DSR(DR)
RS(RTS)	7		RS(RTS)
CS(CTS)	8		CS(CTS)
RI(CI)	9		

Appendix 4 Multi-CPU System

The valid CPU number specified for a multi-CPU system is that of the last accessed station only.
When making access to the non-control CPU of the relay module on the accessed station, use the modules of function version B as the relay modules and QCPUs (Q mode) on the own station, all relay stations and accessed station.

(Example 1) CPU COM communication
When the PLC CPU No. 3 (0x3E2) is specified for access, access is made to the CPU ③.

① :QCPU (Q mode) No. 1
② :QCPU (Q mode) No. 2
③ :QCPU (Q mode) No. 3
④ :QCPU (Q mode) No. 4
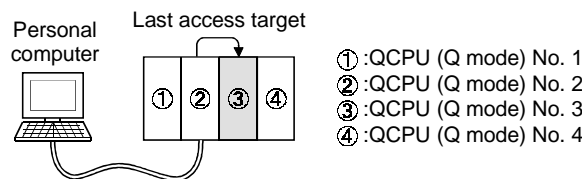
(Example 2) CPU COM communication (via MELSECNET/H)
When the PLC CPU No. 3 (0x3E2), network number 2 and station number 2 are specified for access, access is made to the CPU ③'.
The CPU number cannot be specified for the relay station.
Therefore, if access is made to the network No. 1 in the following case, an error will occur since the network number controlled by the CPU ② is only "2".

① : QCPU (Q mode) No. 1
② : QCPU (Q mode) No. 2
③ : QCPU (Q mode) No. 3
④ : QCPU (Q mode) No. 4
[1] : MELSECNET/H module controlled by ①
      (Network number: 1, station number: 1)
[2] : MELSECNET/H module controlled by ②
      (Network number: 2, station number: 1)
[2'] : MELSECNET/H module controlled by ②'
      (Network number: 2, station number: 2)
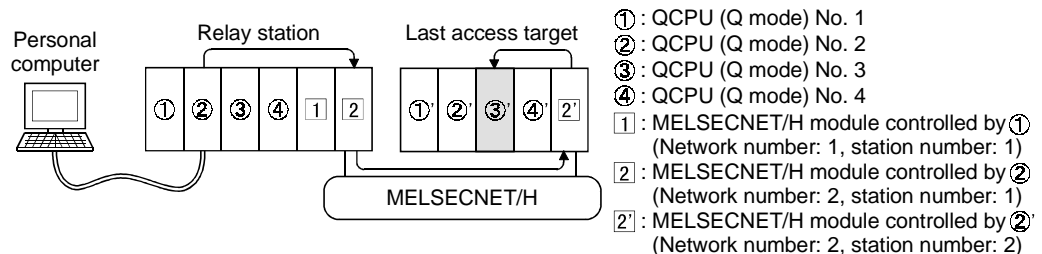
Appendix 5 Number of Loadable Network Modules When Q00JCPU, Q00CPU or Q01CPU Is Used

The following indicates the number of loadable network modules that may be connected when the Q00JCPU, Q00CPU or Q01CPU is used.

Network Module	Number of Loadable Modules
MELSECNET/H module	1 module
Ethernet module	1 module
CC-Link module(Function version B or later)	2 modules

Therefore, the following systems cannot be configured.

(Example 1) Since the number of loadable Ethernet modules is 1, the part of the system indicated by the dotted line cannot be configured.
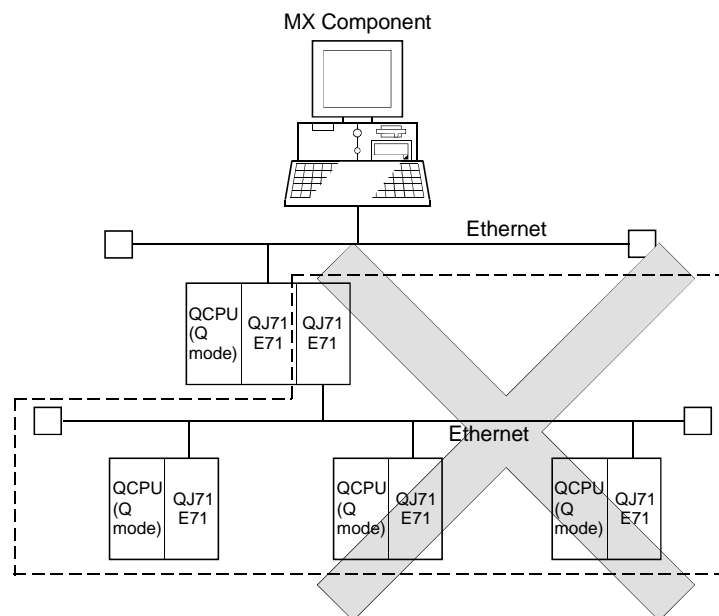
(Example 2) Since the number of loadable MELSECNET/H modules is one, the part of the system indicated by the dotted line cannot be configured.
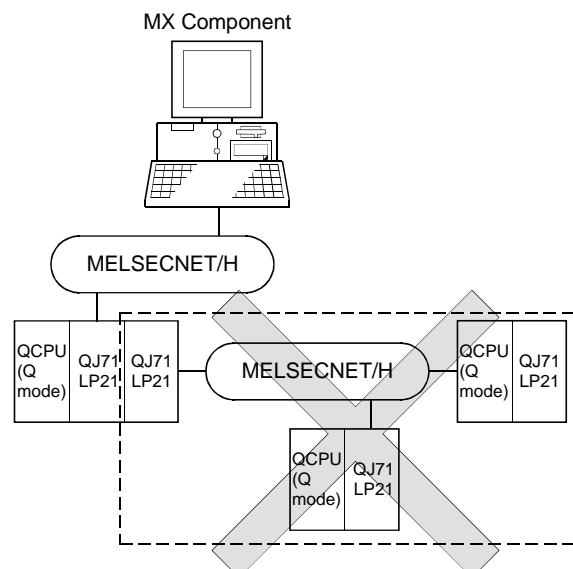
Appendix 6 Flowchart for the case where access cannot be performed during modem
communication

If the PLC CPU cannot be accessed using modem communication, refer to the
following flowchart and take corrective action.

```
                    ┌─────────────────────┐
                    │        Start        │
                    └─────────────────────┘
                               │
                               ▼
              ╱────────────────────────────╲              ┌──────────────────────────────┐
             ╱  Can normal modem communication ╲    No     │ Reexamine the wiring, switch    │
             ╲  be executed using GX Developer? ╱ ───────▶ │ settings, parameter settings,   │
              ╲────────────────────────────╱              │ etc.                            │
                               │                           └──────────────────────────────┘
                              Yes
                               ▼
              ╱────────────────────────────╲              ┌──────────────────────────────┐
             ╱     Did the communication     ╲    No       │ 1) Reexamine the setting of the │
             ╲ test of the communication     ╱ ───────▶    │    logical station number.      │
             ╲ settings utility end normally? ╱            │ 2) Take corrective action for   │
              ╲────────────────────────────╱               │    the error that occurred.     │
                               │                           └──────────────────────────────┘
                              Yes
                               ▼
              ╱────────────────────────────╲    Yes       ┌──────────────────────────────┐
             ╱ Did an error occur in the user ╲ ───────▶   │ Reexamine the user program.     │
             ╲ program that was executed?     ╱            └──────────────────────────────┘
              ╲────────────────────────────╱
                               │
                              No
                               ▼
                    ┌─────────────────────┐
                    │         End         │
                    └─────────────────────┘
```
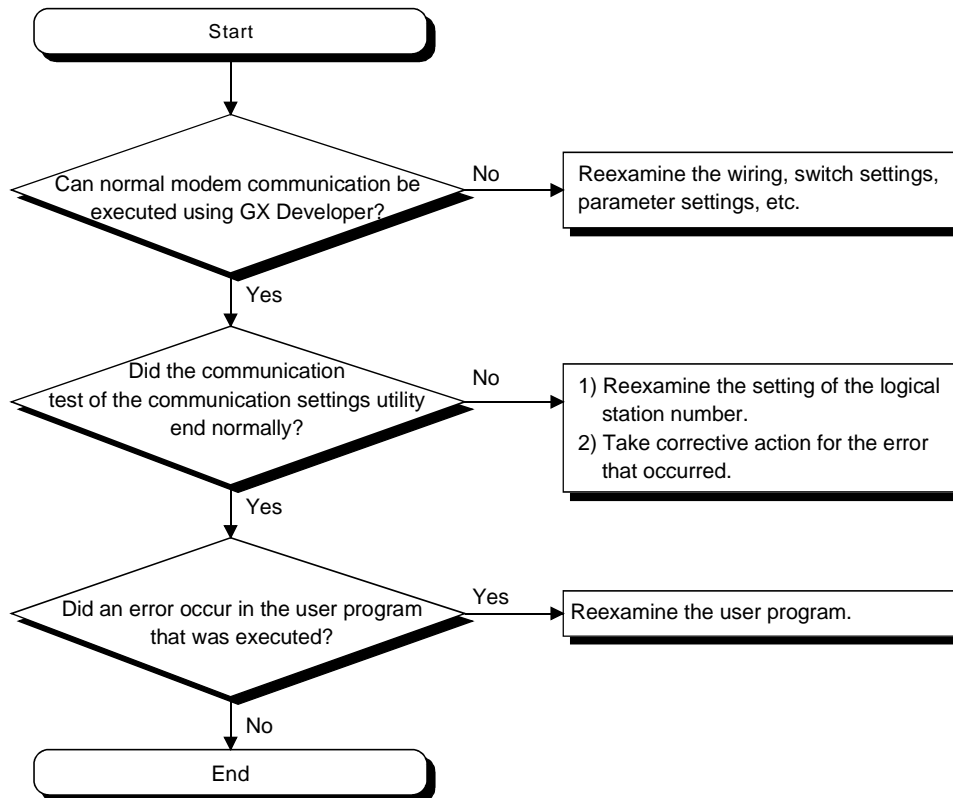
MEMO

MX Component Version 3

Operating Manual

MODEL	MELS3-ACTE-O-E
MODEL CODE	13JU32
SH(NA)-080271-C(0209)MEE	

MITSUBISHI ELECTRIC CORPORATION

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